

March 8, 2022

Mr. Matt Gadd  
West Virginia Department of Environmental Protection  
131A Peninsula Street  
Wheeling, West Virginia 26003

Dear Matt:

Subject: 2021 Monitored Natural Attenuation Report  
Mingo Junction Steel Works – Corrective Action Areas VIM and VIIM  
Weirton, Hancock County, West Virginia  
VRP Site Number 20015  
CEC Project 174-529.3H0Z

On behalf of Mingo Junction Steel Works, LLC (MJSW) and the Business Development Corporation of the Northern Panhandle (BDC), Civil & Environmental Consultants, Inc. (CEC) has performed the natural attenuation monitoring at the MJSW Corrective Action Areas VIM and VIIM Site #20015 (Site) during the 2021 calendar year. The monitoring was performed in accordance with the Natural Attenuation Monitoring and Reporting Plan (the Plan) outlined in the Site's Remedial Action Work Plan submitted by CEC on September 13, 2021 (revised based on WVDEP comments and resubmitted on October 15, 2021) and approved by the WVDEP via a letter dated October 19, 2021. The Site location is shown on Figure 1.

## INTRODUCTION

The Plan was prepared to meet the requirements of Section 5.1.4.4 of the Voluntary Remediation Program (VRP) Guidance Manual, dated June 2020. As outlined in the Plan, five rounds of groundwater samples were proposed to be collected from monitoring wells VI-MW-01A, VI-MW-02AR, VI-MW-01P, VII-MW-01A, VII-MW-02A, VII-MW-03A, VII-MW-01P, VII-MW-02P, and VII-MW-03P to supplement the three rounds of samples that were collected in 2013, 2014, and 2019 (for a total of eight rounds as required under Section 5.1.4.4 of the VRP Guidance Manual). The samples were proposed to be collected during the fourth quarter 2021 and quarterly during 2022. Six rounds of samples were proposed to be collected for wells VII-MW-04P and VII-MW-07P, which were installed in November 2017 and sampled in January and April 2019. The samples were proposed to be collected during the fourth quarter 2021 and quarterly during 2022 along with the nine wells listed above, with one additional sampling round performed during the first quarter of 2023. Monitoring well locations in CAA VIM and VIIM are shown on Figures 2 and 3, respectively. An expanded view of monitoring well locations in the Hydrochloric Acid Regeneration Plant (HARP) area is provided on Figure 4.

The Plan specifies that each sample will be analyzed for the constituents of concern (COC) that exceeded West Virginia De Minimis values during the previous sampling events. The COC to be analyzed at each monitoring well are shown on Table 1. Volatile Organic Compounds (VOCs) (1,1-Dichloroethane, Chloroform, Dichlorobromomethane, and Tetrachloroethene) will be analyzed via United States Environmental Protection Agency (USEPA) Method 8260 low level. Semi-volatile Organic Compounds

(SVOCs) [1,1'-Biphenyl and Bis(2-ethylhexyl) phthalate] and Polynuclear Aromatic Hydrocarbons (PAHs) (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz(a,h)anthracene, indeno[1,2,3-cd]pyrene, and naphthalene) will be analyzed via USEPA Method 8270D low level. Dissolved metals (cobalt, iron, lead, manganese, and vanadium) will be analyzed via USEPA Method 6020. Additionally, natural attenuation indicator parameters dissolved oxygen, nitrate, ferric iron, sulfate, methane, alkalinity, oxidation reduction potential (ORP), pH, and chloride will also be analyzed.

Sampling and analytical procedures will follow those outlined in the RFI Work Plan for CAAs VI and VII (approved by USEPA on September 19, 2013) that was provided to WVDEP as an attachment to the VRP application for the site.

## SAMPLING ACTIVITIES

The fourth quarter 2021 sampling event was performed by MJSW personnel on December 21, 22, 23, and 27, 2021. A sample from each designated monitoring well and one field duplicate sample was collected in accordance with the Plan. The samples were submitted to the Eurofins Test America laboratory in Pittsburgh, Pennsylvania (Test America) for analysis of the designated COC as well as natural attenuation indicator parameters nitrate, ferric iron, sulfate, methane, alkalinity, and chloride. Dissolved oxygen, ORP, and pH were measured in the field at the time of sample collection.

MJSW personnel also collected static water level readings from the monitoring wells prior to sample collection. The water levels were converted to groundwater elevations using the surveyed well casing elevations. Measured groundwater elevations, as well as arrows indicating the general direction of groundwater flow, are shown on Figures 2, 3 and 4.

The laboratory report for the December 2021 sampling event is included on a compact disc in Attachment 1. The December 2021 analytical results, along with the analytical results from the 2013, 2014, and 2019 sampling events, are summarized on Tables 2 through 12, one table for each of the sampled wells, respectively. Tables 2 through 12 also include a screening comparison to the WVDEP Groundwater De Minimis values. Note that DeMinimis standards that were used to identify the Site COCs were revised in December 2021, and the new De Minimis standards for three of the COCs are considerably higher than the original values (80 µg/l vs 0.22 µg/l for Chloroform, 80 µg/l vs 0.13 µg/l for Dichlorobromomethane, and 150 µg/l vs 1.2 µg/l for vanadium). The December 2021 De Minimis values are included on Tables 2 through 12.

Finally, in accordance with the Plan, time series charts showing COC concentration trends for each monitoring well were also prepared and are included in Attachment 2.

## DISCUSSION

The following provides a description of the sampling results and the trends observed for each monitoring well.

VI-MW-01A (Table 2) is screened in the alluvial aquifer near a former gasoline storage tank within the former Trucking Department area in CAA VIM.

- Chloroform was detected during each of the four sampling events, and the detected concentrations remained relatively consistent from 2013 to 2021, ranging from 4.3 µg/l to 2.74 µg/l. All of the detected concentration are well below the De Minimis standard of 80 µg/l.
- Dichlorobromomethane was detected at the low concentrations of 1.1 µg/l and 1.4 µg/l during the 2013 and 2014 sampling events, respectively, but was not detected during the 2019 or 2021 events. The 2013 and 2014 detected concentrations are well below the De Minimis standard of 80 µg/l.
- Manganese concentrations showed an overall declining trend from 1100 µg/l in 2013 to 4.0 µg/l in 2019, then rebounded slightly to 219 µg/l in 2021. Only the 2013 concentration is above the De Minimis standard of 430 µg/l.
- Vanadium concentrations were relatively stable over the four sampling events, ranging from 2.2 µg/l in 2013 to 2.04 µg/l in 2021. All of the detected concentrations are well below the De Minimis Standard of 150 µg/l.

VI-MW-02AR (Table 3) is screened in the alluvial aquifer near a former outdoor sump associated with the former Machine Shop in CAA VIM.

- Chloroform was detected at the low concentrations of 0.21 µg/l and 0.25 µg/l during the 2013 and 2014 sampling events, respectively, but was not detected during the 2019 or 2021 events. The 2013 and 2014 detected concentrations are well below the De Minimis standard of 80 µg/l.
- Manganese was detected at 920 µg/l during the 2013 sampling event, 61 µg/l and 1.9 µg/l during the 2014 and 2019 events, and 524 µg/l during the 2021 event. The cause of the high variability of the sampling results is not known. Concentration trends in this well will continue to be evaluated during future sampling events.
- Vanadium concentrations were stable from 2013 through 2019 with concentrations of 1.4 µg/l, 1.8 µg/l, and 1.2 µg/l, respectively. The 2021 result increased to 6.56 µg/l; however, the 2021 sample also had higher turbidity than the previous samples. Regardless, all of the detected concentrations are well below the De Minimis Standard of 150 µg/l. Concentration trends in this well will continue to be evaluated during future sampling events and care will be taken to minimize turbidity to strive for more consistent results.

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VI-MW-01P (Table 4) monitors a perched groundwater zone near the former diesel storage tanks in the former Trucking Department area of CAA VIM.

- Chloroform concentrations increased slightly from the 2013 to 2014 sampling events from 1.5 µg/l to 2.6 µg/l, but were non-detect during the 2019 and 2021 events. The detected concentrations are well below the De Minimis standard of 80 µg/l.
- Manganese concentrations were very similar during the 2013 and 2014 sampling events (5900 µg/l and 6000 µg/l), declined significantly during the 2019 event (1400 µg/l), then rebounded to 3530 µg/l during the 2021 event. The cause of the high variability of the sampling results is not known. Concentration trends in this well will continue to be evaluated during future sampling events.
- Vanadium was only detected during the 2019 sampling event at 1.7 µg/l, well below the De Minimis Standard of 150 µg/l.

VII-MW-01A (Table 5) is screened in the alluvial aquifer near the former Hot Mill Wastewater Treatment Plant in CAA VIIM.

- 1,1-Dichloroethane concentrations exhibited a overall declining trend from 7.0 µg/l during the 2013 sampling event to 1.79 µg/l during the 2021 sampling event. The 2021 result is below the De Minimis standard of 2.8 µg/l.
- Chloroform was detected at the very low concentration of 0.25 µg/l during the 2013 sampling event but was not detected in the three subsequent sampling events. The 2013 detected concentration is well below the De Minimis standard of 80 µg/l.
- Manganese concentrations declined during the first three sampling events (1300 µg/l in 2013 to 450 µg/l in 2019) but rebounded to 1110 µg/l during the 2021 event. All of the results exceed the De Minimis standard of 430 µg/l.
- Vanadium concentrations showed a declining trend from 5.8 µg/l in 2013 to 1.3 µg/l in 2019 but then slightly rebounded to 6.17 µg/l during the 2021 event. The 2021 sample had significantly higher turbidity than the previous samples. Regardless, all of the detected concentrations are well below the De Minimis Standard of 150 µg/l. Concentration trends in this well will continue to be evaluated during future sampling events and care will be taken to minimize turbidity to strive for more consistent results.

VII-MW-02A (Table 6) is screened in the alluvial aquifer near the former U.S. Filter Oil Treatment Plant in CAA VIIM.

- Chloroform was detected at 1.2 µg/l and 4.3 µg/l during the 2013 and 2014 sampling events, respectively, but was not detected during the 2019 or 2021 events. The 2013 and 2014 detected concentrations are well below the De Minimis standard of 80 µg/l.

- The Polynuclear Aromatic Hydrocarbons listed above were all detected during the 2013 sampling event and at lower concentrations during the 2019 sampling event. None were detected during the 2014 or 2021 sampling events.
- Manganese concentrations exhibited an overall increasing trend ranging from 350 µg/l during the 2013 sampling event to 1330 µg/l during the 2021 event.
- Vanadium was detected at relatively low concentrations during the 2013 (1.9 µg/l), 2014 (0.39 µg/l), and 2019 (1.2 µg/l) sampling events and was not detected during the 2021 event. All of the detected concentrations are well below the De Minimis Standard of 150 µg/l.

VII-MW-03A (Table 7) is screened in the alluvial aquifer near the former Hydrochloric Acid Regeneration Plant in CAA VIIM.

- Bis(2-ethylhexyl) phthalate was detected at 13 µg/l during the 2013 sampling event and at 0.6 µg/l during the 2014 sampling event but was not detected during the 2019 or 2021 sampling events. The 2013 detected concentration was above the De Minimis Standard of 6 µg/l.
- Cobalt concentrations exhibited a declining trend from 60 µg/l during the 2013 sampling event to 27.9 µg/l during the 2021 event. All of the detected concentrations are above the De Minimis standard of 6 µg/l.
- Iron concentrations were somewhat erratic, ranging from 1400 µg/l during the 2014 sampling event to 74,000 µg/l during the 2019 sampling event. Detected concentrations during the 2013 and 2021 events were 29,000 µg/l and 57,300 µg/l, respectively. The detected concentrations exhibited a strong correlation to sample turbidity. Care will be taken during future events to minimize turbidity to strive for more consistent results.
- Lead concentrations exhibited a decreasing trend from 2013 to 2021. Lead was detected at 31 µg/l during the 2013 sampling event, at 4.4 µg/l during the 2014 event, 0.17 µg/l during the 2019 event, and was not detected during the 2021 event. Only the 2013 concentration is above the De Minimis standard of 15 µg/l.
- Manganese concentrations exhibited an overall declining trend, ranging from 19,000 µg/l during the 2013 and 2014 sampling events, to 7,450 µg/l during the 2021 event.
- Vanadium concentrations exhibited a stable to declining trend, ranging from 2.2 µg/l in 2013 to non-detect in 2021. All of the concentrations were well below the De Minimis standard of 150 µg/l.

VII-MW-01P (Table 8) is screened in the perched groundwater zone near the former Hydrochloric Acid Regeneration Plant building in CAA VIIM.

- 1,1'-Biphenyl concentrations exhibited a slight increasing trend from 0.78 µg/l during the 2013 sampling event to 2.0 µg/l during the 2019 event, then declined to 0.943 µg/l during the 2021 event. The 2014, 2019, and 2021 concentrations were above the De Minimis standard of 0.83 µg/l.

- Naphthalene was detected at 4.7 µg/l and 9.1 µg/l during the 2013 and 2014 sampling events, then showed a declining trend with concentrations of 7.0 µg/l and 5.3 µg/l during the 2019 and 2021 events. All of the detected concentrations were above the De Minimis standard of 0.12 µg/l. It is noted that naphthalene was analyzed via both Methods 8260 and 8270 during the 2019 sampling event; the 8260 result was 24 µg/l versus the 8270 result of 7 µg/l. However, for the purpose of evaluating trends and stability, the 8270 results were used since there are four datapoints for naphthalene using that method (versus only the one 8260 result). Going forward, naphthalene will continue to be analyzed via Method 8270 to provide a consistent dataset for evaluating trends.
- Cobalt was detected at 98 µg/l during the 2013 sampling event, then at significantly lower concentrations during the 2014 (0.71 µg/l), 2019 (0.31 µg/l), and 2021 (4.81 µg/l) sampling events. Only the 2013 concentration was above the De Minimis standard of 6 µg/l.
- Iron was detected at 60,000 µg/l during the 2013 sampling event, then at significantly lower concentrations during the 2014 (42 µg/l), 2019 (<14 µg/l), and 2021 (1660 µg/l). Only the 2013 concentration was above the De Minimis standard of 14,000 µg/l.
- Manganese was detected at 30,000 µg/l during the 2013 sampling event, then at significantly lower concentrations during the 2014 (25 µg/l), 2019 (<1.4 µg/l), and 2021 (1040 µg/l). Only the 2013 and 2021 concentrations were above the De Minimis standard of 430 µg/l.
- Vanadium concentrations exhibited a slight increasing trend, ranging from 0.33 µg/l in 2013 to 3.41 µg/l in 2021. All of the concentrations were well below the De Minimis standard of 150 µg/l.

VII-MW-07P (Table 9) is also screened in the perched groundwater zone near the former Hydrochloric Acid Regeneration Plant building in CAA VIIM. This well was installed in late 2017 and was only sampled three times: January 2019, April 2019, and December 2021.

- Chloroform concentrations exhibited an increasing trend, ranging from <0.6 µg/l in January 2019 to 12.5 µg/l in December 2021. All of the detected concentrations are well below the De Minimis standard of 80 µg/l.
- Dichlorobromomethane was only detected during the April 2019 sampling event at 1.3 µg/l, well below the De Minimis standard of 80 µg/l.

VII-MW-03P (Table 10) is screened in the perched groundwater zone near the former drum storage rack in the Hydrochloric Acid Regeneration Plant area in CAA VIIM.

- Tetrachloroethene concentrations increased from 2013 (2.9 µg/l) to 2014 (10 µg/l), but then declined in 2019 (2.6 µg/l) and 2021 (4.6 µg/l). Only the 2014 concentration was above the De Minimis standard of 5 µg/l.
- 1,1'-Biphenyl concentrations exhibited a slight increasing trend from 1.6 µg/l during the 2013 sampling event to 2.6 µg/l during the 2014 event, but was not detected during the 2019 and 2021 events. The 2013 and 2014 concentrations were above the De Minimis standard of 0.83 µg/l.

- Naphthalene concentrations exhibited a declining trend ranging from 23 µg/l during the 2013 sampling event to non-detect (<0.10 µg/l) during the 2021 event. All of the detected concentrations were above the De Minimis standard of 0.12 µg/l. It is noted that naphthalene was analyzed via both Methods 8260 and 8270 during the 2019 sampling event; the 8260 result was 6.2 µg/l versus the 8270 result of <0.28 µg/l. However, for the purpose of evaluating trends and stability, the 8270 results were used since there are four datapoints for naphthalene using that method (versus only the one 8260 result). Going forward, naphthalene continue to be analyzed via Method 8270 to provide a consistent dataset for evaluating trends.
- Vanadium concentrations were very low during the 2013 (1.3 µg/l) and 2014 (1.5 µg/l) sampling, increased to 5.7 µg/l during the 2019 event, then declined to 1.2 µg/l during the 2021 event. All of the concentrations were well below the De Minimis standard of 150 µg/l.

VII-MW-04P (Table 11) is also screened in the perched groundwater zone near the former drum storage rack in the Hydrochloric Acid Regeneration Plant area in CAA VIIM. This well was installed in late 2017 and was only sampled three times: January 2019, April 2019, and December 2021.

- Naphthalene concentrations increased from 2.4 µg/l during the January 2019 sampling event to 13 µg/l during the April 2019 event but was non-detect (<1.03 µg/l) during the 2021 event. It is noted that the 2019 samples were analyzed using USEPA Method 8260 and the 2021 sample was analyzed using USEPA Method 8270. Future samples will be analyzed using both Methods 8260 and 8270 in order to determine whether naphthalene is present at this location and if so, what the concentrations trends are. .

VII-MW-02P (Table 12) is screened in a perched water-bearing zone at the former Yard Office locomotive fueling station soil excavation area in CAA VII.

- Naphthalene was detected at very low concentrations during the 2013 (0.21 µg/l) and 2014 (0.16 µg/l) sampling events but was not detected during the 2019 or 2021 events. The 2013 and 2014 detections only marginally exceeding the De Minimis standard of 0.12 µg/l. It is noted that naphthalene was analyzed via both Methods 8260 and 8270 during the 2019 sampling event. Both results were non-detect; the 8260 result was <0.79 µg/l versus the 8270 result of <0.057 µg/l. For the purpose of evaluating trends and stability, the 8270 results were used since there are four datapoints for naphthalene using that method (versus only the one 8260 result). Going forward, naphthalene will continue to be analyzed via Method 8270 to provide a consistent dataset for evaluating trends.

## CONCLUSIONS AND RECOMMENDATIONS

Most of the COCs exhibited stable or declining concentration trends. Exceptions included:

- Manganese concentrations in monitoring well VII-MW-02A exhibited an increasing trend, and concentrations in wells VI-MW-02AR, VI-MW-01P, VII-MW-01A, and VII-MW-01P were variable without clear trends. Manganese concentrations are elevated Site-wide and are believed to be related to slag that has historically been used as fill to raise the original ground surface across the Site.
- Iron concentrations in monitoring wells VII-MW-03A and VII-MW-01P were highly variable and did not exhibit clear trends. The variable results may be related to sample turbidity. Care will be taken during future events to minimize turbidity with the goal of obtaining more representative results.
- Vanadium concentrations in monitoring wells VI-MW-02AR and VII-MW-01A exhibited an increasing trend during the 2021 sampling event, which may be associated with the higher turbidity observed during the event. Additionally, the vanadium concentrations in well VII-MW-01P exhibited a slight increasing trend. However, all of the vanadium detections across the Site are well below the current De Minimis value of 150 µg/l.
- Chloroform concentrations in monitoring well VII-MW-07P exhibited an overall increasing trend; however, all of the detected concentrations of chloroform across the Site are well below the current De Minimis value of 80 µg/l.

Trends for these and the other COCs will continue to be evaluated during the 2022 quarterly sampling program and will be presented in the 2022 Monitoring Report.

As described above, the De Minimis standards for chloroform, dichlorobromomethane, and vanadium were revised in December 2021 and are now considerably higher than the values used to identify COCs for the Monitored Natural Attenuation (MNA) program. As such, the highest observed concentrations of these constituents are well below their corresponding De Minimis standards (chloroform maximum concentration of 4.3 µg/l versus 80 µg/l De Minimis standard, dichlorobromomethane maximum concentration of 1.4 µg/l versus 80 µg/l De Minimis standard, and vanadium maximum concentration of 10 µg/l versus 150 µg/l De Minimis standard). In recent correspondence, you indicated that these constituents could be eliminated from the MNA monitoring program in wells where concentration trends are stable or declining. Based on that criterion, CEC is proposing to eliminate the following:

- Chloroform, dichlorobromomethane, and vanadium from well VI-MW-01A;
- Chloroform from well VI-MW-02AR;
- Chloroform and vanadium from well VI-MW-01P;
- Chloroform from well VII-MW-01A;
- Chloroform and vanadium from well VII-MW-02A;

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- Vanadium from well VII-MW-03A;
- Dichlorobromomethane from well VII-MW-07P; and
- Vanadium from well VII-MW-03P

We look forward to your response regarding the elimination of these COC from the monitoring program.

Feel free to contact us if you have any questions or would like to discuss any of the information provided in this report,

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



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EAS:DNO/ad  
Enclosures

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Public Repository – Office of Business Development of the Northern Panhandle

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## **TABLES**

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**TABLE 1**  
**SUMMARY OF CONTAMINANTS OF CONCERN IN GROUNDWATER BY WELL**  
**CAA VIM AND VIIM**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

Medium	Contaminants of Concern
VI-MW-01A	Chloroform Dichlorobromomethane Manganese Vanadium
VI-MW-02AR	Chloroform Manganese Vanadium
VI-MW-01P	Chloroform Manganese Vanadium
VII-MW-01A	1,1-Dichloroethane Chloroform Manganese Vanadium
VII-MW-02A	Chloroform Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene Benzo[k]fluoranthene Dibenz(a,h)anthracene Indeno[1,2,3-cd]pyrene Manganese Vanadium
VII-MW-03A	Bis(2-ethylhexyl) phthalate Cobalt Iron Lead Manganese Vanadium

**TABLE 1**  
**SUMMARY OF CONTAMINANTS OF CONCERN IN GROUNDWATER BY WELL**  
**CAA VIM AND VIIM**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

Medium	Contaminants of Concern
VII-MW-01P	Naphthalene 1,1'-Biphenyl Cobalt Iron Manganese Vanadium
VII-MW-02P	Naphthalene Vanadium
VII-MW-03P	Naphthalene Tetrachloroethene 1,1'-Biphenyl Vanadium
VII-MW-04P	Naphthalene
VII-MW-07P	Chloroform Dichlorobromomethane

**TABLE 2**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VI-MW-01A**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VI-MW-01A 11/19/2013	VI-MW-01A 180-29862-1 02/13/2014	VI-MW-01A 04/01/2019	VI-MW-01A 12/21/2021	VI-MW-01A	VI-MW-01A	VI-MW-01A	VI-MW-01A
<b>Volatile Organic Compounds</b>											
Chloroform	ug/l	8260	80	3.7	4.1	< 4.3	2.74				
Dichlorobromomethane	ug/l	8260	80	1.1	1.4	< 0.64	< 0.641				
<b>Inorganics <sup>(1)</sup></b>											
Manganese	ug/l	6020	430	1100	94	4	219				
Vanadium	ug/l	6020	150	2.2 L	1.5	1.4	2.04				
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	NA	82.8				
Chloride	mg/L	300.0_28D	--	NA	NA	NA	162				
Ferric Iron	mg/L	3500_F+3	--	NA	NA	NA	1.84				
Ferrous Iron	mg/L	3500 F+2	--	NA	NA	NA	< 0.075 HF				
Nitrate as N	mg/L	300	10000	NA	NA	NA	2.08 H,H3				
Sulfate	mg/L	300.0_28D	--	NA	NA	NA	163				
Methane	ug/L	RSK_175	--	NA	NA	NA	< 1				
<b>Field Parameters</b>											
pH	S.U.	--	--	5.28	6.21	6.19	6.41				
ORP	mV	--	--	49.9	35.4	194	333				
Dissolved Oxygen	mg/L	--	--	4.77	5.66	6.76	8.22				
Specific Conductivity	mS/cm	--	--	0.795	0.727	1.718	1.58				
Temperature	C	--	--	14.36	13.34	12.96	12.36				
Turbidity	NTU	--	--	47.4	6.78	24	73.2				

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 3**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VI-MW-02AR**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VI-MW-02AR 11/14/2013	VI-MW-02AR 180-29862-3 02/13/2014	VI-MW-02AR 04/01/2019	VI-MW-02AR 12/21/2021	VI-MW-02AR	VI-MW-02AR	VI-MW-02AR	VI-MW-02AR
<b>Volatile Organic Compounds</b>											
Chloroform	ug/l	8260	80	0.21 B	0.25 J	< 0.6	< 0.598				
<b>Inorganics <sup>(1)</sup></b>											
Manganese	ug/l	6020	430	920	61 J	1.9 J	524				
Vanadium	ug/l	6020	150	1.4	1.8 J	1.2	6.56				
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	NA	46.5				
Chloride	mg/L	300.0_28D	--	NA	NA	NA	139				
Ferric Iron	mg/L	3500_F+3	--	NA	NA	NA	8.33				
Ferrous Iron	mg/L	3500 F+2	--	NA	NA	NA	< 0.075 HF				
Nitrate as N	mg/L	300	10000	NA	NA	NA	3.14 H,H3				
Sulfate	mg/L	300.0_28D	--	NA	NA	NA	434 F1				
Methane	ug/L	RSK_175	--	NA	NA	NA	< 1				
<b>Field Parameters</b>											
pH	S.U.	--	--	6.24	6.15	6.27	6.63				
ORP	mV	--	--	33.4	71.6	1888	331				
Dissolved Oxygen	mg/L	--	--	3.28	5.43	5.03	5.16				
Specific Conductivity	mS/cm	--	--	1.287	1.429	1.22	1.14				
Temperature	C	--	--	16.39	13.77	11.55	14.79				
Turbidity	NTU	--	--	16.1	250	25.7	375				

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 4**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VI-MW-01P**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VI-MW-01P 11/18/2013	VI-MW-01P 180-29862-2 02/13/2014	VI-MW-01P 04/01/2019	VI-MW-01P 12/21/2021	VI-MW-01P	VI-MW-01P	VI-MW-01P	VI-MW-01P
<b>Volatile Organic Compounds</b>											
Chloroform	ug/l	8260	80	1.5	2.6	< 0.6	< 0.598				
<b>Inorganics <sup>(1)</sup></b>											
Manganese	ug/l	6020	430	5900	6000	J					
Vanadium	ug/l	6020	150	< 0.082 UL	< 0.082 UJ	1.7	< 0.991				
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	NA	147				
Chloride	mg/L	300.0_28D	--	NA	NA	NA	84				
Ferric Iron	mg/L	3500_F+3	--	NA	NA	NA	3.72				
Ferrous Iron	mg/L	3500_F+2	--	NA	NA	NA	0.234 HF				
Nitrate as N	mg/L	300	10000	NA	NA	NA	0.464 H,H3				
Sulfate	mg/L	300.0_28D	--	NA	NA	NA	171				
Methane	ug/L	RSK_175	--	NA	NA	NA	40.3				
<b>Field Parameters</b>											
pH	S.U.	--	--	6.45	6.00	6.16	6.33				
ORP	mV	--	--	-19.1	10.4	102.5	208				
Dissolved Oxygen	mg/L	--	--	1.33	2.63	1.39	5.89				
Specific Conductivity	mS/cm	--	--	0.666	0.652	0.917	0.75				
Temperature	C	--	--	14.76	9.26	10.48	14.68				
Turbidity	NTU	--	--	1.98	5.28	7.89	0				

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 5**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-01A**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-01A 11/18/2013	VII-MW-01A 180-30000-1 02/19/2014	VII-MW-01A DUP 180-30000-2 02/19/2014 Duplicate	VII-MW-01A 03/28/2019	VII-MW-01A 12/27/2021	VII-MW-01A	VII-MW-01A	VII-MW-01A
<b>Volatile Organic Compounds</b>											
1,1-Dichloroethane	ug/l	8260	2.8	7 0.25	6.7 B	6.9	6 < 0.6	1.79 < 0.598	*+		
Chloroform	ug/l	8260	80	< 0.17	< 0.17						
<b>Inorganics<sup>(1)</sup></b>											
Manganese	ug/l	6020	430	1300 5.8	1100 0.46	J B	1100 0.34	J B	450 1.3	1110 6.17	
Vanadium	ug/l	6020	150								
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA		NA	NA	64.8		
Chloride	mg/L	300_0_28D	--	NA	NA		NA	NA	215		
Ferric Iron	mg/L	3500_F+3	--	NA	NA		NA	NA	4.76		
Ferrous Iron	mg/L	3500 F+2	--	NA	NA		NA	NA	0.276 HF,F1		
Nitrate as N	mg/L	300	10000	NA	NA		NA	NA	0.0795 J,H		
Sulfate	mg/L	300_0_28D	--	NA	NA		NA	NA	254		
Methane	ug/L	RSK_175	--	NA	NA		NA	NA	161		
<b>Field Parameters</b>											
pH	S.U.	--	--	6.41	5.83		NA	6.09	5.66		
ORP	mV	--	--	96.5	163		NA	80.2	346		
Dissolved Oxygen	mg/L	--	--	1.71	1.48		NA	1.43	0.1		
Specific Conductivity	mS/cm	--	--	1.193	1.161		NA	1.184	1.38		
Temperature	C	--	--	14.09	12.57		NA	12.21	12.48		
Turbidity	NTU	--	--	69	10.1		NA	11.63	228		

Notes:

(1) Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 6**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-02A**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-02A 11/18/2013	VII-MW-02A 180-30000-3 02/19/2014	VII-MW-02A 03/28/2019	VII-MW-02A 12/22/2021	VII-MW-02A	VII-MW-02A	VII-MW-02A	VII-MW-02A
<b>Volatile Organic Compounds</b>											
Chloroform	ug/l	8260	80	1.2	B	4.3	< 0.6	< 0.598			
<b>Semi-Volatile Organics</b>											
Benzo[a]anthracene	ug/l	8270	0.03	0.24		< 0.035	0.1	J	< 0.075	H,*-	
Benzo[a]pyrene	ug/l	8270	0.2	0.21		< 0.027	0.07	J	< 0.0435	H,*-	
Benzo[b]fluoranthene	ug/l	8270	0.25	0.34		< 0.047	0.11	J	< 0.0772	H,*-	
Benzo[k]fluoranthene	ug/l	8270	2.5	0.36		< 0.029	0.14	J	< 0.0707	H,*-	
Dibenz(a,h)anthracene	ug/l	8270	0.025	0.41		< 0.026	0.12	J	< 0.0804	H,*-	
Indeno[1,2,3-cd]pyrene	ug/l	8270	0.25	0.37		< 0.042	0.11	J	< 0.0717	H,*-	
<b>Inorganics <sup>(1)</sup></b>											
Manganese	ug/l	6020	430	350		24	J	940			
Vanadium	ug/l	6020	150	1.9	L	0.39	B	1.2	< 0.991		
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA		NA	NA		42.4		
Chloride	mg/L	300.0_28D	--	NA		NA	NA		86.5		
Ferric Iron	mg/L	3500_F+3	--	NA		NA	NA		0.31		
Ferrous Iron	mg/L	3500 F+2	--	NA		NA	NA		< 0.075	HF	
Nitrate as N	mg/L	300	10000	NA		NA	NA		0.201		
Sulfate	mg/L	300.0_28D	--	NA		NA	NA		124		
Methane	ug/L	RSK_175	--	NA		NA	NA		< 1		
<b>Field Parameters</b>											
pH	S.U.	--	--	5.41		6.19	6.12		6.6		
ORP	mV	--	--	53.8		176.4	129		284		
Dissolved Oxygen	mg/L	--	--	7.85		5.15	1.24		8.39		
Specific Conductivity	mS/cm	--	--	0.897		0.676	0.692		0.555		
Temperature	C	--	--	13.57		14.13	12.2		4.15		
Turbidity	NTU	--	--	36.6		0.89	2.17		0.1		

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 7**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-03A**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-03A 11/04/2013	VII-MW-03A 180-30000-4 02/19/2014	VII-MW-03A 03/29/2019	VII-MW-03A 12/22/2021	VII-MW-03A	VII-MW-03A	VII-MW-03A	VII-MW-03A
<b>Semi-Volatile Organics</b> Bis(2-ethylhexyl) phthalate	ug/l	8270	6	13	0.6 J	< 6.8	< 52.6				
<b>Inorganics<sup>(1)</sup></b>											
Cobalt	ug/l	6020	6	60 B	47 J	39	27.9				
Iron	ug/l	6020	14000	29000 B	1400 J	74000	57300 B				
Lead	ug/l	6020	15	31 B	4.4 J	0.17 J	< 0.128				
Manganese	ug/l	6020	430	19000 B	19000 J	9800	7450				
Vanadium	ug/l	6020	150	2.2 B	0.13 B	0.97 J	< 0.991				
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	NA	24.2				
Chloride	mg/L	300.0_28D	--	NA	NA	NA	234				
Ferric Iron	mg/L	3500_F+3	--	NA	NA	NA	45.7				
Ferrous Iron	mg/L	3500_F+2	--	NA	NA	NA	11.6 HF				
Nitrate as N	mg/L	300	10000	NA	NA	NA	< 0.023				
Sulfate	mg/L	300.0_28D	--	NA	NA	NA	176				
Methane	ug/L	RSK_175	--	NA	NA	NA	14.5				
<b>Field Parameters</b>											
pH	S.U.	--	--	2.27	3.02	4.99	6.34				
ORP	mV	--	--	562.3	537.4	213.8	201				
Dissolved Oxygen	mg/L	--	--	4.43	6.06	1.56	9				
Specific Conductivity	mS/cm	--	--	2.546	1.493	1.337	0.987				
Temperature	C	--	--	14.37	13.96	12.52	11.71				
Turbidity	NTU	--	--	NM	0.3	9.7	7				

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

NM Parameter not measured

**TABLE 8**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-01P**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-01P 11/18/2013	VII-MW-01P 180-29862-4 02/14/2014	VII-MW-01P 04/03/2019	VII-MW-01P 12/22/2021	VII-MW-01P	VII-MW-01P	VII-MW-01P	VII-MW-01P
<b>Volatile Organic Compounds</b>											
Naphthalene	ug/l	8260	0.12	NA	NA	24 J	NA				
<b>Semi-Volatile Organics</b>											
1,1'-Biphenyl	ug/l	8270	0.83	0.78 J	1.3	2 J	0.943 J,H,*-				
Naphthalene	ug/l	8270	0.12	4.7	9.1	7	5.25 H,*-				
<b>Inorganics<sup>(1)</sup></b>											
Cobalt	ug/l	6020	6	98	0.71 J	0.31 J	4.81				
Iron	ug/l	6020	14000	60000	42 J	< 14	1660 B				
Manganese	ug/l	6020	430	30000	25 J	< 1.4	1040				
Vanadium	ug/l	6020	150	0.33 L	< 0.082 UJ	2.2	3.41				
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	NA	319				
Chloride	mg/L	300.0_28D	--	NA	NA	NA	2000				
Ferric Iron	mg/L	3500_F+3	--	NA	NA	NA	< 0.075				
Ferrous Iron	mg/L	3500 F+2	--	NA	NA	NA	8.79 HF				
Nitrate as N	mg/L	300	10000	NA	NA	NA	< 0.115				
Sulfate	mg/L	300.0_28D	--	NA	NA	NA	643				
Methane	ug/L	RSK_175	--	NA	NA	NA	1.4 J				
<b>Field Parameters</b>											
pH	S.U.	--	--	10.56	12.25	11.86	12.42				
ORP	mV	--	--	-430.2	-204.4	-92.6	-7				
Dissolved Oxygen	mg/L	--	--	0.26	0.69	1.55	0.11				
Specific Conductivity	mS/cm	--	--	4.516	4.873	2.75	6.44				
Temperature	C	--	--	16.07	10.66	9.62	14.13				
Turbidity	NTU	--	--	14	48.4	3.4	0				

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 9**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-07P**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-07P 01/17/2019	VII-MW-07P 04/01/2019	VII-MW-07P 12/22/2021	VII-MW-07P	VII-MW-07P	VII-MW-07P	VII-MW-07P	VII-MW-07P
<b>Volatile Organic Compounds</b>											
Chloroform	ug/l	8260	80	< 0.6	3.5	12.5					
Dichlorobromomethane	ug/l	8260	80	< 0.64	1.3	< 0.641					
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	68.7					
Chloride	mg/L	300.0_28D	--	NA	NA	68.1					
Ferric Iron	mg/L	3500_F+3	--	NA	NA	6.32					
Ferrous Iron	mg/L	3500 F+2	--	NA	NA	< 0.075 HF					
Nitrate as N	mg/L	300	10000	NA	NA	1.19 H					
Sulfate	mg/L	300.0_28D	--	NA	NA	82.2					
Methane	ug/L	RSK_175	--	NA	NA	< 1					
<b>Field Parameters</b>											
pH	S.U.	--	--	6.69	6.88	6.57					
ORP	mV	--	--	154.4	125.2	339					
Dissolved Oxygen	mg/L	--	--	5.88	8.4	4.32					
Specific Conductivity	mS/cm	--	--	0.754	0.574	0.48					
Temperature	C	--	--	13.1	9.5	13.79					
Turbidity	NTU	--	--	9.02	9.8	108					

Notes:

(1) Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 10**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-03P**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-03P 11/18/2013	VII-MW-03P 180-29862-6 02/14/2014	VII-MW-03P 04/03/2019	VII-MW-03P 12/27/2021				
<b>Volatile Organic Compounds</b>											
Naphthalene	ug/l	8260	0.12	NA	NA	6.2	J	NA			
Tetrachloroethene	ug/l	8260	5	2.9	J	10	2.6	4.59			
<b>Semi-Volatile Organics</b>											
1,1'-Biphenyl	ug/l	8270	0.83	1.6		2.6	< 0.28	< 0.364	H,*-		
Naphthalene	ug/l	8270	0.12	23		17	< 0.28	< 0.103	H,*-		
<b>Inorganics <sup>(1)</sup></b>											
Vanadium	ug/l	6020	150	1.3	L	1.5	J	5.7	1.2		
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	NA	38.6				
Chloride	mg/L	300.0_28D	--	NA	NA	NA	157				
Ferric Iron	mg/L	3500_F+3	--	NA	NA	NA	0.855				
Ferrous Iron	mg/L	3500_F+2	--	NA	NA	NA	< 0.075	HF			
Nitrate as N	mg/L	300	10000	NA	NA	NA	0.0404	JH			
Sulfate	mg/L	300.0_28D	--	NA	NA	NA	232				
Methane	ug/L	RSK_175	--	NA	NA	NA	1040				
<b>Field Parameters</b>											
pH	S.U.	--	--	10.8	9.71	8.2	8.31				
ORP	mV	--	--	-223	-92.6	-79.3	4				
Dissolved Oxygen	mg/L	--	--	1.39	1.73	1.56	0.09				
Specific Conductivity	mS/cm	--	--	1.797	1.388	0.655	1.15				
Temperature	C	--	--	13.88	9.11	9.76	15.22				
Turbidity	NTU	--	--	2.79	3.65	3.37	0				

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 11**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-04P**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-04P 01/17/2019	VII-MW-04P 04/03/2019	VII-MW-04P 12/22/2021	VII-MW-04P	VII-MW-04P	VII-MW-04P	VII-MW-04P	VII-MW-04P
<b>Volatile Organic Compounds</b>											
Naphthalene	ug/l	8260	0.12	2.4	13 J	NA					
<b>Semi-Volatile Organics</b>											
Naphthalene	ug/l	8270	0.12	NA	NA	< 1.03					
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	36.4					
Chloride	mg/L	300.0_28D	--	NA	NA	419					
Ferric Iron	mg/L	3500_F+3	--	NA	NA	1.14					
Ferrous Iron	mg/L	3500 F+2	--	NA	NA	< 0.075 HF					
Nitrate as N	mg/L	300	10000	NA	NA	< 0.023					
Sulfate	mg/L	300.0_28D	--	NA	NA	152					
Methane	ug/L	RSK_175	--	NA	NA	21.1					
<b>Field Parameters</b>											
pH	S.U.	--	--	10.74	10.77	11.26					
ORP	mV	--	--	3.2	-124.6	46					
Dissolved Oxygen	mg/L	--	--	1.4	1.66	0					
Specific Conductivity	mS/cm	--	--	0.447	0.861	1.43					
Temperature	C	--	--	10.97	7.8	13.79					
Turbidity	NTU	--	--	8.67	6.31	0					

Notes:

(<sup>1</sup>) Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

**TABLE 12**  
**SUMMARY OF MONITORED NATURAL ATTENUATION MONITORING RESULTS - VII-MW-02P**  
**MINGO JUNCTION STEEL WORKS LLC - WEIRTON FACILITY VRP#20015**

	Units	Analytical Method	Groundwater De Minimis	VII-MW-02P 11/18/2013	VII-MW-02P 180-29862-5 02/13/2014	VII-MW-02P 03/28/2019	VII-MW-02P 12/27/2021	VII-MW-02P	VII-MW-02P	VII-MW-02P	VII-MW-02P
<b>Volatile Organic Compounds</b>											
Naphthalene	ug/l	8260	0.12	NA	NA	< 0.79	NA				
<b>Semi-Volatile Organics</b>											
Naphthalene	ug/l	8270	0.12	0.21	0.16 J	< 0.057 UJ	< 0.103 H,*-				
<b>Inorganics <sup>(1)</sup></b>											
Vanadium	ug/l	6020	150	10 L	1.8 J	8	2.27				
<b>General Chemistry and Gases</b>											
Alkalinity	mg/L	2320B	--	NA	NA	NA	58				
Chloride	mg/L	300_0_28D	--	NA	NA	NA	93.5				
Ferric Iron	mg/L	3500_F+3	--	NA	NA	NA	< 0.075				
Ferrous Iron	mg/L	3500 F+2	--	NA	NA	NA	< 0.075 HF				
Nitrate as N	mg/L	300	10000	NA	NA	NA	< 0.023 H				
Sulfate	mg/L	300_0_28D	--	NA	NA	NA	127				
Methane	ug/L	RSK_175	--	NA	NA	NA	349				
<b>Field Parameters</b>											
pH	S.U.	--	--	8.97	8.58	8.26	9.4				
ORP	mV	--	--	-19	62.1	113.1	-29				
Dissolved Oxygen	mg/L	--	--	1.44	0.82	2.05	0.02				
Specific Conductivity	mS/cm	--	--	0.173	0.233	0.425	0.82				
Temperature	C	--	--	17	9.58	8.9	12.81				
Turbidity	NTU	--	--	8.98	5.38	6.71	0				

Notes:

<sup>(1)</sup> Groundwater samples were collected for total inorganic analysis during the November 2013 event and dissolved inorganic analysis during the subsequent events

\*+ LCS and/or LCSD is outside acceptance limits, high biased.

\*- LCS and/or LCSD is outside acceptance limits, low biased.

H Sample was prepped or analyzed beyond the specified holding time

H3 Sample was received and analyzed past holding time.

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

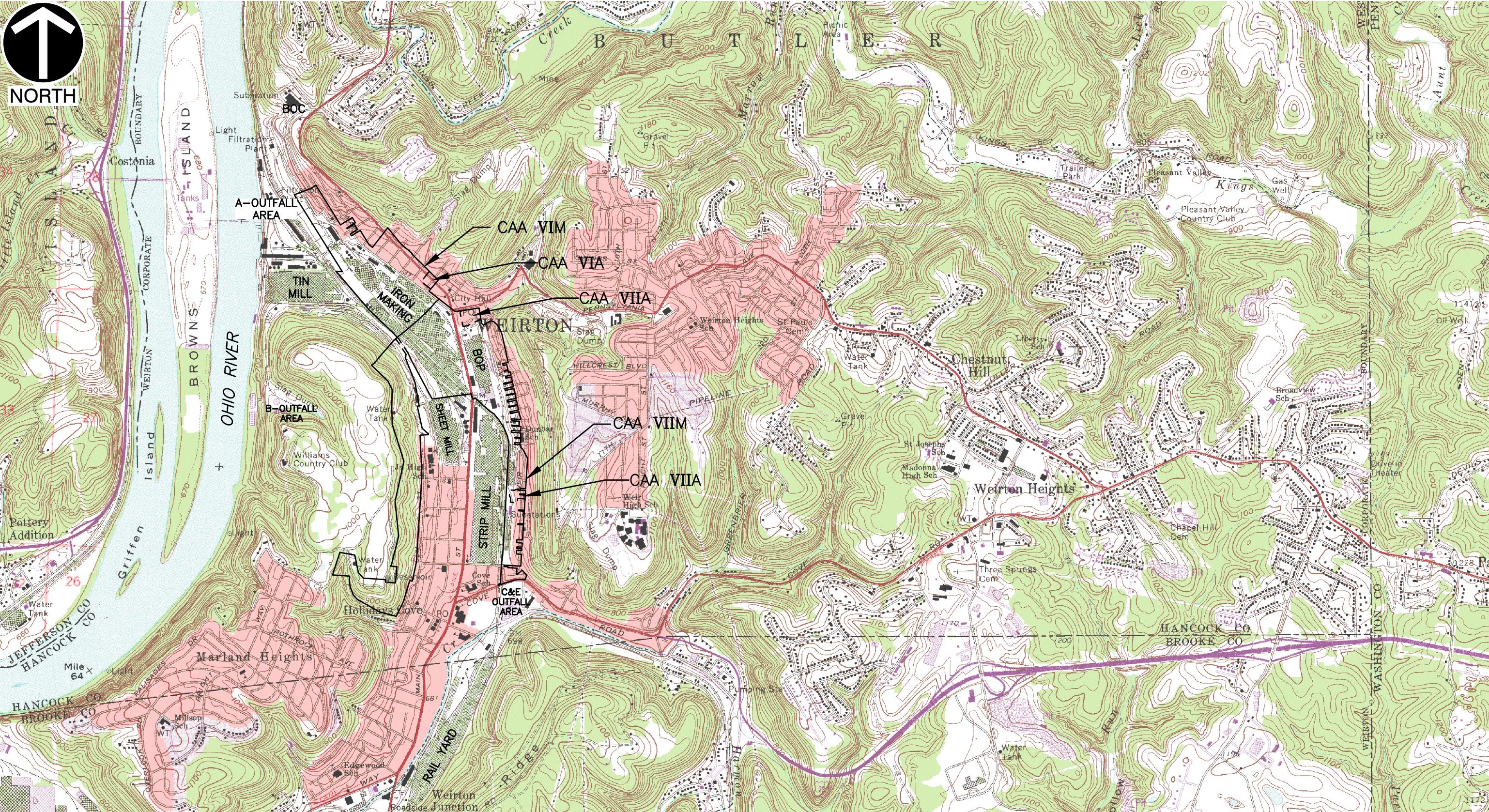
F1 MS and/or MSD recovery exceeds control limits

B Compound was found in the blank and sample.

---

## **FIGURES**

---



**REFERENCE**

1. U.S.G.S. 7.5' TOPOGRAPHIC MAP, WEIRTON QUADRANGLE, WV-PA-OH DATED: 1968, PHOTOREVISED: 1990.

\* HAND SIGNATURE ON FILE

SCALE IN FEET

0 2000 4000



**Civil & Environmental Consultants, Inc.**

4350 Northern Pike · Suite 141 · Monroeville, PA 15146  
724-327-5200 · 800-899-3610  
[www.cecinc.com](http://www.cecinc.com)

MJSW - WEIRTON FACILITY  
RCRA CORRECTIVE ACTION - CAAs VIM AND VIIM  
WEIRTON, WEST VIRGINIA

CAAs VIM AND VIIM SITE LOCATION MAP

DRAWN BY:	ZLD	CHECKED BY:	TEA	APPROVED BY:	*DNO	FIGURE NO.:
DATE:	JUNE 18, 2019	DWG SCALE:	1"=2000'	PROJECT NO:	174-529	1



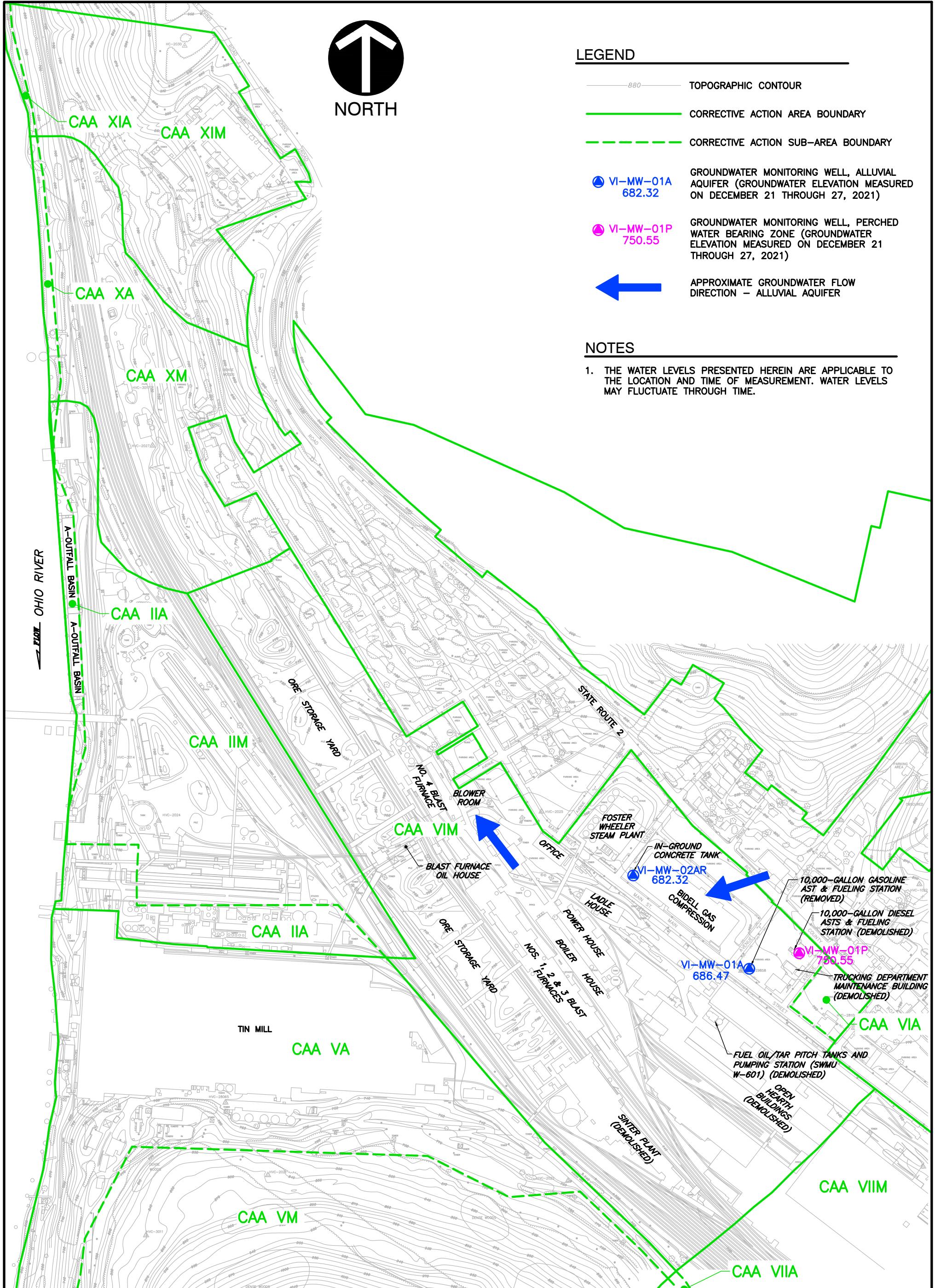
NORTH

## LEGEND

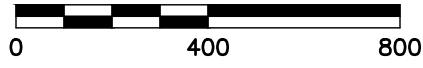
- TOPOGRAPHIC CONTOUR  
 — CORRECTIVE ACTION AREA BOUNDARY  
 - - - CORRECTIVE ACTION SUB-AREA BOUNDARY  
 ● VI-MW-01A 682.32  
 ● VI-MW-01P 750.55  
 ← APPROXIMATE GROUNDWATER FLOW DIRECTION – ALLUVIAL AQUIFER

## NOTES

1. THE WATER LEVELS PRESENTED HEREIN ARE APPLICABLE TO THE LOCATION AND TIME OF MEASUREMENT. WATER LEVELS MAY FLUCTUATE THROUGH TIME.



SCALE IN FEET

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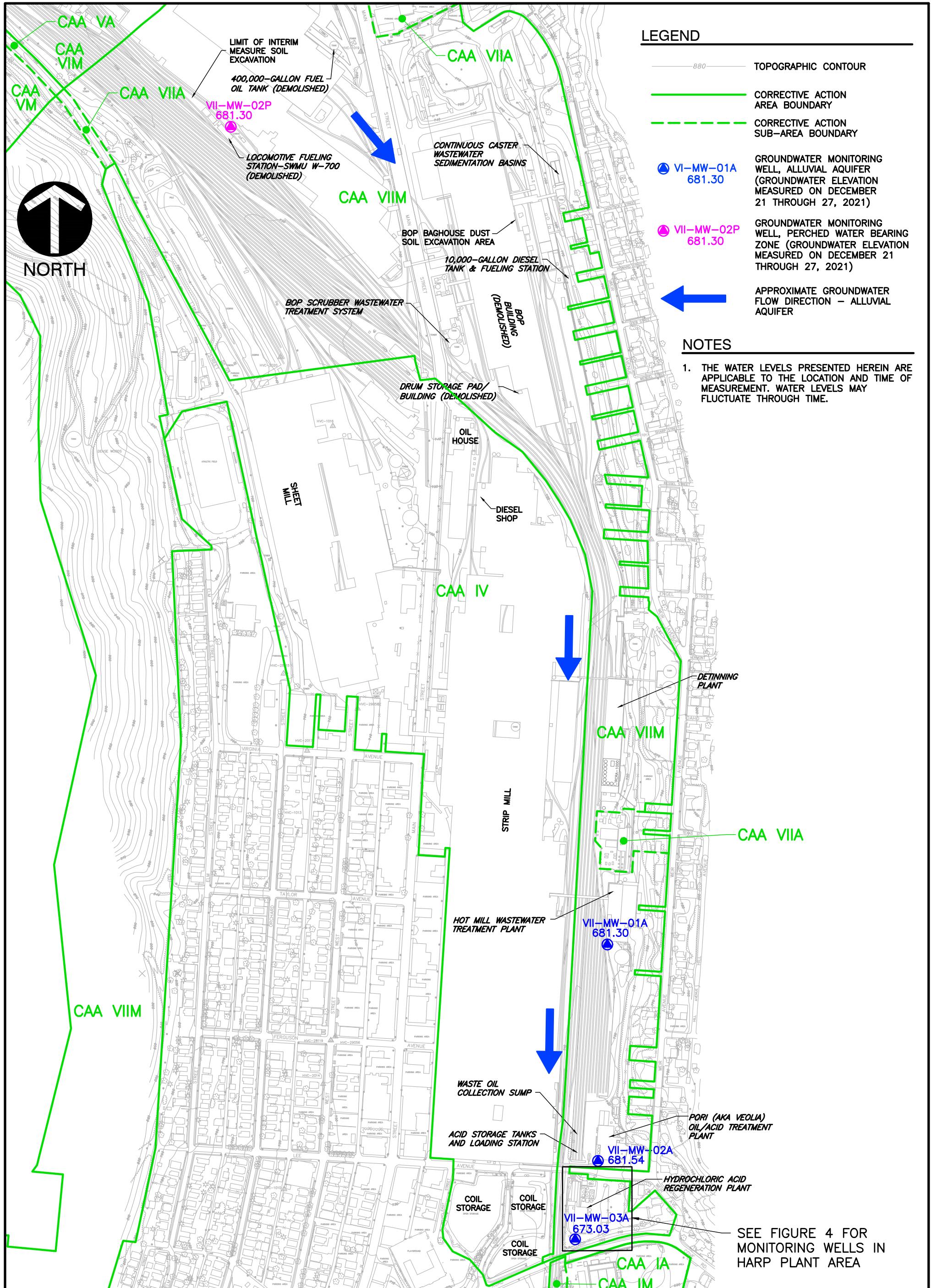
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**MJSW - WEIRTON FACILITY  
CAAs VIM AND VIIM  
WEIRTON, WEST VIRGINIA**
**CAA VIM GROUNDWATER  
MONITORING WELL LOCATIONS**

DRAWN BY:	DMM	CHECKED BY:	EAS	APPROVED BY:	*DNO	FIGURE NO.:
DATE:	JANUARY 28, 2022	DWG SCALE:	1"=400'	PROJECT NO:	174-529	2

## REFERENCE

1. TOPOGRAPHIC MAPPING PREPARED BY ADR EASTERN MAPPING DATED APRIL 9, 1990.



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[www.cecin.com](http://www.cecin.com) \*HAND SIGNATURE ON FILE

MJSW - WEIRTON FACILITY  
CAAs VIM AND VIIM  
WEIRTON, WEST VIRGINIA

CAA VIIM GROUNDWATER  
MONITORING WELL LOCATIONS

**REFERENCE**

- TOPOGRAPHIC MAPPING PREPARED BY ADR EASTERN MAPPING DATED APRIL 9, 1990.

DRAWN BY: DMM | CHECKED BY: EAS | APPROVED BY: \*DNO | FIGURE NO.: 3

&lt;/div



NORTH

LEGEND

710

TOPOGRAPHIC CONTOUR

VII-MW-04P  
704.71GROUNDWATER MONITORING WELL, PERCHED  
WATER BEARING ZONE (GROUNDWATER ELEVATION  
MEASURED ON DECEMBER 21 THROUGH 27, 2021)APPROXIMATE GROUNDWATER FLOW  
DIRECTION - PERCHED WATER  
BEARING ZONE

LEE AVENUE

HVC-1011

FORMER 5,000  
GALLON DIESEL  
AST AND FUELING  
STATIONFORMER HARP PICKLE LIQUOR  
TANKS (SWMU W-1004)IN-GROUND SUMPS (SWMU  
S-K1) FORMERLY OVERLAIN  
BY DRUM STORAGE RACKSVII-MW-04P  
704.71VII-MW-03P  
704.24HYDROCHLORIC ACID  
REGENERATION PLANTVII-MW-07P  
701.44FORMER KEROSENE  
DRUM STORAGE AREAVII-MW-01P  
701.05

PARKING AREA

FORMER 2,000 GALLON DIESEL  
AST AND FUELING AREAFORMER MECHANICAL  
MAINTENANCE BUILDING

720 PARKING AREA

710

700

SCALE IN FEET

REFERENCE

- TOPOGRAPHIC MAPPING PREPARED  
BY ADR EASTERN MAPPING  
DATED APRIL 9, 1990.



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www.cecinc.com \*HAND SIGNATURE ON FILE

MJSW - WEIRTON FACILITY  
CAAs VIM AND VIIM  
WEIRTON, WEST VIRGINIAMONITORING WELL LOCATIONS - HARP PLANT  
CAA VIIM

DRAWN BY:	DMM	CHECKED BY:	EAS	APPROVED BY:	*DNO	FIGURE NO.:
DATE:	JANUARY 28, 2022	DWG SCALE:	1"=30'	PROJECT NO:	174-529	4

---

**ATTACHMENT 1**

**LABORATORY REPORTS**

---



Environment Testing  
America



## ANALYTICAL REPORT

Eurofins Pittsburgh  
301 Alpha Drive  
RIDC Park  
Pittsburgh, PA 15238  
Tel: (412)963-7058

Laboratory Job ID: 180-131730-1  
Client Project/Site: Weirton VRP  
Revision: 4

For:  
Frontier Industrial Corp  
500 Seneca St  
Suite 504  
Buffalo, New York 14204

Attn: Ryan Jacobs

Roxanne Cisneros

Authorized for release by:  
2/8/2022 9:13:09 AM  
Roxanne Cisneros, Senior Project Manager  
(615)301-5761  
[roxanne.cisneros@Eurofinset.com](mailto:roxanne.cisneros@Eurofinset.com)

### LINKS

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results through

**Total Access**

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The  
Expert

Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

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# Case Narrative

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Job ID: 180-131730-1

### Laboratory: Eurofins Pittsburgh

#### Narrative

##### Job Narrative 180-131730-1

Revised Report 2/08/2022 to report to MDL, to correct sample IDs (V11 to VII), to report 8260 LL in place of std 8260, and to report report 8270 LL for selected samples (extracted out of hold), per client request (180-161783-2, -3 and 180-131730-4, -9)

Revised Report 1/29/2022 to include COC 180-131730

Revised Report 1/28/2022 to report to MDL per client request.

#### Comments

Revised Report 1/11/2022 to correct sample ID GW-RJ-VIIMW04P-122221 (180-131730-2) per client email (On the Chain of Custody the sample ID looks like "VIIMW04D" but "VIIMW04P" is the correct ID).

#### Receipt

The samples were received on 12/23/2021 4:20 PM and 12/29/2021 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9° C and 2.4° C.

#### Receipt Exceptions

The containers received for the following sample did not match the information listed on the Chain-of-Custody (COC):  
GW-RJ-VIIMW04P-122221 (180-131730-2). Two amber 250 ml glass containers were received with 8270 written on the labels, while the COC does not list the analysis.

The container received for the following sample did not match the information listed on the Chain-of-Custody (COC):  
GW-RJ-CAMV04AR-122321 (180-131730-8). One plastic unpreserved 500 ml container was received with Diss Tal Metals written on the label, while the COC does not list the analysis for this sample.

The container received for the following sample did not match the information listed on the Chain-of-Custody (COC):  
GW-RJ-VIMW02AR-122121 (180-131730-1), GW-RJ-VIIMW04P-122221 (180-131730-2), GW-RJ-VIIMW03A-122221 (180-131730-3),  
GW-RJ-VIIMW01P-122221 (180-131730-4), GW-RJ-VIMW01A-122121 (180-131730-5), GW-RJ-VIMW01P-122121 (180-131730-6),  
GW-RJ-VIIMW02A-122221 (180-131730-9) and GW-RJ-DUP1-122321 (180-131730-10). The COC lists 3500\_F+3\_B\_Calc which calls for unpreserved volume: however the container received is preserved with nitric acid.

The container received for the following sample did not match the information listed on the Chain-of-Custody (COC):  
GW-RJ-VIMW02AR-122121 (180-131730-1), GW-RJ-VIIMW04P-122221 (180-131730-2), GW-RJ-VIIMW03A-122221 (180-131730-3),  
GW-RJ-VIIMW01P-122221 (180-131730-4), GW-RJ-VIMW01A-122121 (180-131730-5), GW-RJ-VIMW01P-122121 (180-131730-6),  
GW-RJ-VIIMW07P-122221 (180-131730-7), GW-RJ-VIIMW02A-122221 (180-131730-9) and GW-RJ-DUP1-122321 (180-131730-10). The metals container label does not have field filtered written on them: however the analysis on the COC lists FF.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC):  
GW-RJ-CAMV04AR-122321 (180-131730-8). The container labels list a sample collection date of 12/23/21 while the COC lists 12/22/2021. The date on the COC was used.

#### GC/MS VOA

Method 8260C: Internal standard (ISTD) response for 1,4-Dichlorobenzene-d4 for the following samples in analytical batch 180-383673 was outside acceptance criteria: GW-RJ-VIMW01A-122121 (180-131730-5), GW-RJ-VIIMW07P-122221 (180-131730-7) and GW-RJ-VIIMW02A-122221 (180-131730-9). This ISTD does not correspond to any of the requested target compounds reported from this analytical batch; therefore, the data have been reported.

Method 8260C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 180-383765 were outside control limits. Sample matrix interference is suspected.

Method 8260C: The continuing calibration verification (CCV) analyzed in batch 180-383765 was outside the method criteria for Chloroform (HIGH). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

# Case Narrative

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Job ID: 180-131730-1 (Continued)

### Laboratory: Eurofins Pittsburgh (Continued)

Method 8260C: The laboratory control sample (LCS) for analytical batch 180-383765 recovered outside control limits for Chloroform. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Methods 8260C: The continuing calibration verification (CCV) analyzed in 180-383968 was outside the method criteria for 1,2-Dichloroethane-d4 (Surrogate). All samples recovered this surrogate within QC criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

Methods 8270D: The continuing calibration verification (CCV) associated with batch 180-383841 recovered above the upper control limit for Pentachlorophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCVIS 180-383841/3).

Method 8270E LL: The laboratory control sample (LCS) and the laboratory sample duplicate (LCSD) for preparation batch 180-387059 and analytical batch 180-387126 recovered outside acceptance limits for several compounds. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC VOA

Method RSK-175: The following samples were diluted to bring the concentration of target analytes within the calibration range: GW-RJ-VIIMW03P-122721 (180-131783-2) and GW-RJ-VIIMW02P-122721 (180-131783-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC Semi VOA

Method 300.0: The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: Due to the sample's conductivity reading a dilution was performed on the sample's initial analysis, which is an indication of the amount of anions present in the samples. Therefore, any non-detection will have elevated reporting levels. Even though the target anions were not detected in the dilution analysis, this is the lowest possible level of detection that can be obtained from the samples matrix because there are other non-target anions are present in this sample at these high levels which would contaminate the IC system, & render it non-operational for hours or even days. All non-detection anion data is reported at these elevated reporting levels: GW-RJ-VIIMW01P-122221 (180-131730-4). Elevated reporting limits (RLs) are provided.

Method 300.0: The following sample was received outside of holding time: GW-RJ-VIMW02AR-122121 (180-131730-1), GW-RJ-VIMW01A-122121 (180-131730-5), GW-RJ-VIMW01P-122121 (180-131730-6) and GW-RJ-VIIMW07P-122221 (180-131730-7).

Method 300.0: The matrix spike duplicate (MSD) recoveries for analytical batch 180-383425 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.0: The following sample was received with less than 3 hours remaining on the holding time remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time due to instrumental problems, sample receiving problems, & overload of short holding time sample workload. But conductivity was checked within holding time: : EQUIPMENT BLANK (180-131783-1), GW-RJ-VIIMW03P-122721 (180-131783-2) and GW-RJ-VIIMW02P-122721 (180-131783-3), GW-RJ-VIIMW01A-122721 (180-131783-4), GW-RJ-VIIMW01A-122721 (180-131783-4[MS]) and GW-RJ-VIIMW01A-122721 (180-131783-4[MSD]).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method 6020A: The post digestion spike % recovery for silver and zinc associated with batch 180-384060 was outside of control limits. The associated sample is: GW-RJ-VIIMW03A-122221 (180-131730-3).

# Case Narrative

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Job ID: 180-131730-1 (Continued)

### Laboratory: Eurofins Pittsburgh (Continued)

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-383822 and analytical batch 180-384204 were outside control limits for aluminum and iron. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-383822 and analytical batch 180-384204 were outside control limits for iron. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### General Chemistry

Method SM 3500 FE D: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: GW-RJ-VIMW02AR-122121 (180-131730-1), GW-RJ-VIIMW04P-122221 (180-131730-2), GW-RJ-VIIMW03A-122221 (180-131730-3), GW-RJ-VIIMW01P-122221 (180-131730-4), GW-RJ-VIMW01A-122121 (180-131730-5), GW-RJ-VIMW01P-122121 (180-131730-6), GW-RJ-VIIMW07P-122221 (180-131730-7), GW-RJ-VIIMW02A-122221 (180-131730-9) and GW-RJ-DUP1-122321 (180-131730-10).

Method SM 3500 FE D: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: EQUIPMENT BLANK (180-131783-1), GW-RJ-VIIMW03P-122721 (180-131783-2), GW-RJ-VIIMW02P-122721 (180-131783-3), GW-RJ-VIIMW01A-122721 (180-131783-4), GW-RJ-VIIMW01A-122721 (180-131783-4[MS]) and GW-RJ-VIIMW01A-122721 (180-131783-4[MSD]).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-383702.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-384027.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-387059.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Definitions/Glossary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.

### GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated

## Definitions/Glossary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

### Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Accreditation/Certification Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Laboratory: Eurofins Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	142	01-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
EPA 6020A	3005A	Water	Cobalt
EPA 6020A	3005A	Water	Iron
EPA 6020A	3005A	Water	Lead
EPA 6020A	3005A	Water	Manganese
EPA 6020A	3005A	Water	Vanadium
EPA 8270D	3510C	Water	1,1'-Biphenyl
EPA 8270D	3510C	Water	Benzo[a]anthracene
EPA 8270D	3510C	Water	Benzo[a]pyrene
EPA 8270D	3510C	Water	Benzo[b]fluoranthene
EPA 8270D	3510C	Water	Benzo[k]fluoranthene
EPA 8270D	3510C	Water	Bis(2-ethylhexyl) phthalate
EPA 8270D	3510C	Water	Dibenz(a,h)anthracene
EPA 8270D	3510C	Water	Indeno[1,2,3-cd]pyrene
EPA 8270D	3510C	Water	Naphthalene

## Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22
Connecticut	State	PH-0568	09-30-22
Florida	NELAP	E87672	06-30-22
Georgia	State	10026 (NY)	03-31-22
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	01-31-22
Kentucky (DW)	State	90029	12-31-21 *
Kentucky (UST)	State	30	04-01-22
Kentucky (WW)	State	KY90029	01-12-22
Louisiana	NELAP	02031	06-30-22
Maine	State	NY00044	01-18-22
Maryland	State	294	04-02-22
Massachusetts	State	M-NY044	06-30-22
Michigan	State	9937	04-01-22
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-22
New York	NELAP	10026	04-01-22
Oregon	NELAP	NY200003	06-12-22
Pennsylvania	NELAP	68-00281	07-31-22
Rhode Island	State	LAO00328	12-31-21 *
Tennessee	State	02970	03-31-22

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Pittsburgh

# Accreditation/Certification Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Laboratory: Eurofins Buffalo (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704412-18-10	07-31-22
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-22
Wisconsin	State	998310390	08-31-22

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Eurofins Pittsburgh

# Sample Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	
180-131730-1	GW-RJ-VIMW02AR-122121	Water	12/21/21 15:30	12/23/21 16:20	1
180-131730-2	GW-RJ-VIIMW04P-122221	Water	12/22/21 15:35	12/23/21 16:20	2
180-131730-3	GW-RJ-VIIMW03A-122221	Water	12/22/21 17:20	12/23/21 16:20	3
180-131730-4	GW-RJ-VIIMW01P-122221	Water	12/22/21 14:20	12/23/21 16:20	4
180-131730-5	GW-RJ-VIMW01A-122121	Water	12/21/21 11:35	12/23/21 16:20	5
180-131730-6	GW-RJ-VIMW01P-122121	Water	12/21/21 12:45	12/23/21 16:20	6
180-131730-7	GW-RJ-VIIMW07P-122221	Water	12/22/21 12:55	12/23/21 16:20	7
180-131730-9	GW-RJ-VIIMW02A-122221	Water	12/22/21 18:45	12/23/21 16:20	8
180-131730-10	GW-RJ-DUP1-122321	Water	12/23/21 00:00	12/23/21 16:20	9
180-131783-1	EQUIPMENT BLANK	Water	12/27/21 20:00	12/29/21 09:00	10
180-131783-2	GW-RJ-VIIMW03P-122721	Water	12/27/21 18:00	12/29/21 09:00	11
180-131783-3	GW-RJ-VIIMW02P-122721	Water	12/27/21 14:00	12/29/21 09:00	12
180-131783-4	GW-RJ-VIIMW01A-122721	Water	12/27/21 12:30	12/29/21 09:00	13

# Method Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

Method	Method Description	Protocol	Laboratory
EPA 8260D	Volatile Organic Compounds by GC/MS	SW846	TAL PIT
EPA 8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL PIT
EPA 8270E LL	Semivolatile Organic Compounds (GC/MS)	SW846	TAL PIT
RSK-175	Dissolved Gases (GC)	RSK	TAL BUF
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020A	Metals (ICP/MS)	SW846	TAL PIT
SM 3500	Iron, Ferric	SM	TAL BUF
SM 3500 FE D	Iron, Ferrous and Ferric	SM	TAL BUF
SM2320 B	Alkalinity, Total	SM18	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL PIT
5030C	Purge and Trap	SW846	TAL PIT

## Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIMW02AR-122121**

**Lab Sample ID: 180-131730-1**

**Matrix: Water**

**Date Collected: 12/21/21 15:30**

**Date Received: 12/23/21 16:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D Instrument ID: CHHP5		1	5 mL	5 mL	383673	12/29/21 19:03	J1T	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610258	12/29/21 00:50	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			383425	12/24/21 11:58	JRB	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		5			383425	12/24/21 12:10	JRB	TAL PIT
Dissolved	Prep	3005A			25 mL	25 mL	383653	12/29/21 08:19	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: DORY		1			384060	12/30/21 14:00	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611083	01/07/22 11:50	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		1	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 14:24	HEK	TAL PIT

**Client Sample ID: GW-RJ-VIIMW04P-122221**

**Lab Sample ID: 180-131730-2**

**Matrix: Water**

**Date Collected: 12/22/21 15:35**

**Date Received: 12/23/21 16:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			240 mL	2.5 mL	383702	12/29/21 10:00	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D Instrument ID: CH731		1	1 mL	1 mL	383841	12/30/21 22:32	VVP	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610374	12/29/21 15:42	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			383425	12/24/21 12:47	JRB	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		10			383425	12/24/21 13:00	JRB	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	384190	01/05/22 11:24	KEM	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: A		1			384445	01/06/22 09:16	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611082	01/07/22 11:48	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		1	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 14:28	HEK	TAL PIT

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# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW03A-122221**

**Lab Sample ID: 180-131730-3**

**Matrix: Water**

**Date Collected: 12/22/21 17:20**

**Date Received: 12/23/21 16:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			250 mL	2.5 mL	383702	12/29/21 10:00	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D Instrument ID: CH731		1	1 mL	1 mL	383841	12/30/21 22:54	VVP	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610258	12/29/21 01:27	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			383425	12/24/21 13:12	JRB	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		5			383425	12/24/21 13:24	JRB	TAL PIT
Dissolved	Prep	3005A			25 mL	25 mL	383653	12/29/21 08:19	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: DORY		1			384060	12/30/21 14:04	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611083	01/07/22 11:50	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		5	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 14:31	HEK	TAL PIT

**Client Sample ID: GW-RJ-VIIMW01P-122221**

**Lab Sample ID: 180-131730-4**

**Matrix: Water**

**Date Collected: 12/22/21 14:20**

**Date Received: 12/23/21 16:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			230 mL	2.5 mL	383702	12/29/21 10:00	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D Instrument ID: CH731		1	1 mL	1 mL	383841	12/30/21 23:16	VVP	TAL PIT
Total/NA	Prep	3510C			230 mL	0.25 mL	387059	02/02/22 08:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8270E LL Instrument ID: CH71		1	1 mL	1 mL	387126	02/03/22 13:55	VVP	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610374	12/29/21 16:00	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		5			383425	12/24/21 14:01	JRB	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		50			383425	12/24/21 14:14	JRB	TAL PIT
Dissolved	Prep	3005A			25 mL	25 mL	383653	12/29/21 08:19	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: DORY		1			384060	12/30/21 14:18	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611083	01/07/22 11:50	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		5	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 14:35	HEK	TAL PIT

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# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIMW01A-122121**  
**Date Collected: 12/21/21 11:35**  
**Date Received: 12/23/21 16:20**

**Lab Sample ID: 180-131730-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D Instrument ID: CHHP5		1	5 mL	5 mL	383673	12/29/21 19:28	J1T	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610258	12/29/21 02:05	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			383425	12/24/21 14:26	JRB	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		5			383425	12/24/21 14:38	JRB	TAL PIT
Dissolved	Prep	3005A			25 mL	25 mL	383653	12/29/21 08:19	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: DORY		1			384060	12/30/21 14:29	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611083	01/07/22 11:50	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		1	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 14:38	HEK	TAL PIT

**Client Sample ID: GW-RJ-VIMW01P-122121**  
**Date Collected: 12/21/21 12:45**  
**Date Received: 12/23/21 16:20**

**Lab Sample ID: 180-131730-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D Instrument ID: CHHP5		1	5 mL	5 mL	383673	12/29/21 19:53	J1T	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610258	12/29/21 02:24	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			383425	12/24/21 14:51	JRB	TAL PIT
Dissolved	Prep	3005A			25 mL	25 mL	383653	12/29/21 08:19	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: DORY		1			384060	12/30/21 14:32	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611083	01/07/22 11:50	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		1	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 14:42	HEK	TAL PIT

# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW07P-122221**  
**Date Collected: 12/22/21 12:55**  
**Date Received: 12/23/21 16:20**

**Lab Sample ID: 180-131730-7**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D Instrument ID: CHHP5		1	5 mL	5 mL	383673	12/29/21 20:17	J1T	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610258	12/29/21 02:43	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			383425	12/24/21 16:29	JRB	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	384190	01/05/22 11:24	KEM	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: A		1			384445	01/06/22 09:20	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611083	01/07/22 11:50	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		1	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 15:02	HEK	TAL PIT

**Client Sample ID: GW-RJ-VIIMW02A-122221**

**Lab Sample ID: 180-131730-9**  
**Matrix: Water**

**Date Collected: 12/22/21 18:45**  
**Date Received: 12/23/21 16:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D Instrument ID: CHHP5		1	5 mL	5 mL	383673	12/29/21 20:43	J1T	TAL PIT
Total/NA	Prep	3510C			240 mL	2.5 mL	383702	12/29/21 10:00	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D Instrument ID: CH731		1	1 mL	1 mL	383841	12/30/21 23:38	VVP	TAL PIT
Total/NA	Prep	3510C			230 mL	0.25 mL	387059	02/02/22 08:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8270E LL Instrument ID: CH71		1	1 mL	1 mL	387126	02/03/22 14:18	VVP	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			610258	12/29/21 03:02	DSC	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			383425	12/24/21 15:15	JRB	TAL PIT
Dissolved	Prep	3005A			25 mL	25 mL	383653	12/29/21 08:19	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: DORY		1			384060	12/30/21 14:36	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611083	01/07/22 11:50	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		1	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	383825	12/29/21 15:09	HEK	TAL PIT

# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-DUP1-122321**  
**Date Collected: 12/23/21 00:00**  
**Date Received: 12/23/21 16:20**

**Lab Sample ID: 180-131730-10**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	383673	12/29/21 21:07	J1T	TAL PIT
		Instrument ID: CHHP5								
Total/NA	Prep	3510C			250 mL	2.5 mL	383702	12/29/21 10:00	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	383841	12/31/21 00:01	VVP	TAL PIT
		Instrument ID: CH731								
Total/NA	Analysis	RSK-175		1			610258	12/29/21 03:21	DSC	TAL BUF
		Instrument ID: PE-03								
Total/NA	Analysis	EPA 300.0 R2.1		1			383425	12/24/21 15:40	JRB	TAL PIT
		Instrument ID: CHIC2100A								
Dissolved	Prep	3005A			25 mL	25 mL	383653	12/29/21 08:19	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A		1			384060	12/30/21 14:39	RSK	TAL PIT
		Instrument ID: DORY								
Dissolved	Analysis	SM 3500		1			611083	01/07/22 11:50	JJP	TAL BUF
		Instrument ID: NOEQUIP								
Dissolved	Analysis	SM 3500 FE D		1	25 mL	25 mL	610910	01/05/22 16:00	CSS	TAL BUF
		Instrument ID: Genesys Spec 30								
Total/NA	Analysis	SM2320 B		1	50 mL	50 mL	383825	12/29/21 15:12	HEK	TAL PIT
		Instrument ID: NOEQUIP								

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 180-131783-1**

**Date Collected: 12/27/21 20:00**  
**Date Received: 12/29/21 09:00**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	383765	12/30/21 17:35	J1T	TAL PIT
		Instrument ID: CHHP5								
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	383968	01/03/22 14:59	APD	TAL PIT
		Instrument ID: CHHP5								
Total/NA	Prep	3510C			240 mL	2.5 mL	384027	01/03/22 09:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	384099	01/04/22 15:00	VVP	TAL PIT
		Instrument ID: CH722								
Total/NA	Analysis	RSK-175		1			611059	01/07/22 11:25	MAN	TAL BUF
		Instrument ID: PE-03								
Total/NA	Analysis	EPA 300.0 R2.1		1			383829	12/30/21 22:14	JRB	TAL PIT
		Instrument ID: INTEGRION								
Dissolved	Prep	3005A			50 mL	50 mL	383822	12/30/21 10:25	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A		1			384204	01/04/22 12:08	RSK	TAL PIT
		Instrument ID: DORY								
Dissolved	Analysis	SM 3500		1			611103	01/07/22 14:45	JJP	TAL BUF
		Instrument ID: NOEQUIP								
Dissolved	Analysis	SM 3500 FE D		1	25 mL	25 mL	611030	01/06/22 15:00	CSS	TAL BUF
		Instrument ID: Genesys Spec 30								
Total/NA	Analysis	SM2320 B		1			384516	01/06/22 16:55	CMT	TAL PIT
		Instrument ID: PCTITRATOR								

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# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW03P-122721**

**Lab Sample ID: 180-131783-2**

**Matrix: Water**

Date Collected: 12/27/21 18:00

Date Received: 12/29/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	383765	12/30/21 18:00	J1T	TAL PIT
		Instrument ID: CHHP5								
Total/NA	Prep	3510C			240 mL	2.5 mL	384027	01/03/22 09:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	384099	01/04/22 15:23	VVP	TAL PIT
		Instrument ID: CH722								
Total/NA	Prep	3510C			240 mL	0.25 mL	387059	02/02/22 08:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8270E LL		1	1 mL	1 mL	387126	02/03/22 14:41	VVP	TAL PIT
		Instrument ID: CH71								
Total/NA	Analysis	RSK-175		88			611059	01/07/22 11:06	MAN	TAL BUF
		Instrument ID: PE-03								
Total/NA	Analysis	EPA 300.0 R2.1		1			383829	12/30/21 23:27	JRB	TAL PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 300.0 R2.1		5			383829	12/30/21 23:41	JRB	TAL PIT
		Instrument ID: INTEGRION								
Dissolved	Prep	3005A			50 mL	50 mL	383822	12/30/21 10:25	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A		1			384204	01/04/22 12:11	RSK	TAL PIT
		Instrument ID: DORY								
Dissolved	Analysis	SM 3500		1			611103	01/07/22 14:45	JJP	TAL BUF
		Instrument ID: NOEQUIP								
Dissolved	Analysis	SM 3500 FE D		1	25 mL	25 mL	611030	01/06/22 15:00	CSS	TAL BUF
		Instrument ID: Genesys Spec 30								
Total/NA	Analysis	SM2320 B		1			384516	01/06/22 19:36	CMT	TAL PIT
		Instrument ID: PCTITRATOR								

**Client Sample ID: GW-RJ-VIIMW02P-122721**

**Lab Sample ID: 180-131783-3**

**Matrix: Water**

Date Collected: 12/27/21 14:00

Date Received: 12/29/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			240 mL	2.5 mL	384027	01/03/22 09:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	384099	01/04/22 15:45	VVP	TAL PIT
		Instrument ID: CH722								
Total/NA	Prep	3510C			240 mL	0.25 mL	387059	02/02/22 08:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8270E LL		1	1 mL	1 mL	387126	02/03/22 15:04	VVP	TAL PIT
		Instrument ID: CH71								
Total/NA	Analysis	RSK-175		11			611059	01/07/22 12:22	MAN	TAL BUF
		Instrument ID: PE-03								
Total/NA	Analysis	EPA 300.0 R2.1		1			383829	12/30/21 23:56	JRB	TAL PIT
		Instrument ID: INTEGRION								
Dissolved	Prep	3005A			50 mL	50 mL	383822	12/30/21 10:25	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A		1			384204	01/04/22 12:15	RSK	TAL PIT
		Instrument ID: DORY								
Dissolved	Analysis	SM 3500		1			611103	01/07/22 14:45	JJP	TAL BUF
		Instrument ID: NOEQUIP								

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# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW02P-122721**

**Lab Sample ID: 180-131783-3**

**Matrix: Water**

**Date Collected: 12/27/21 14:00**

**Date Received: 12/29/21 09:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	SM 3500 FE D		1	25 mL	25 mL	611030	01/06/22 15:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			384516	01/06/22 16:43	CMT	TAL PIT

**Client Sample ID: GW-RJ-VIIMW01A-122721**

**Lab Sample ID: 180-131783-4**

**Matrix: Water**

**Date Collected: 12/27/21 12:30**

**Date Received: 12/29/21 09:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D Instrument ID: CHHP5		1	5 mL	5 mL	383765	12/30/21 16:20	J1T	TAL PIT
Total/NA	Analysis	RSK-175 Instrument ID: PE-03		1			611059	01/07/22 10:29	MAN	TAL BUF
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: INTEGRION		1			383924	01/02/22 12:22	M1D	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: INTEGRION		5			383924	01/02/22 12:37	M1D	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	383822	12/30/21 10:25	KFS	TAL PIT
Dissolved	Analysis	EPA 6020A Instrument ID: DORY		1			384204	01/04/22 12:18	RSK	TAL PIT
Dissolved	Analysis	SM 3500 Instrument ID: NOEQUIP		1			611103	01/07/22 14:45	JJP	TAL BUF
Dissolved	Analysis	SM 3500 FE D Instrument ID: Genesys Spec 30		1	25 mL	25 mL	611030	01/06/22 15:00	CSS	TAL BUF
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			384516	01/06/22 15:07	CMT	TAL PIT

**Laboratory References:**

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Eurofins Pittsburgh

# Lab Chronicle

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Analyst References:

Lab: TAL BUF

Batch Type: Analysis

CSS = Chandler Stone

DSC = Daniel Clark

JJP = Jennifer Pierce

MAN = Mary Neary

Lab: TAL PIT

Batch Type: Prep

KEM = Kimberly Mahoney

KFS = Kelly Shannon

SNP = Sydney Prugh

Batch Type: Analysis

APD = Aaron DeLeo

CMT = Cassandra Tlumac

HEK = Hope Kiesling

J1T = Jianwu Tang

JRB = James Burzio

M1D = Maureen Donlin

RSK = Robert Kurtz

VVP = Vincent Piccolino

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# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIMW02AR-122121**

**Lab Sample ID: 180-131730-1**

**Matrix: Water**

Date Collected: 12/21/21 15:30

Date Received: 12/23/21 16:20

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.00	0.598	ug/L			12/29/21 19:03	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	61		36 - 124				Prepared	12/29/21 19:03	1
Dibromofluoromethane (Surr)	124		46 - 149					12/29/21 19:03	1
1,2-Dichloroethane-d4 (Surr)	128		26 - 156					12/29/21 19:03	1
Toluene-d8 (Surr)	85		40 - 146					12/29/21 19:03	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			12/29/21 00:50	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	139		1.00	0.712	mg/L			12/24/21 11:58	1
Nitrate as N	3.14	H H3	0.100	0.0230	mg/L			12/24/21 11:58	1
Sulfate	434	F1	5.00	3.78	mg/L			12/24/21 12:10	5

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	524		5.00	0.866	ug/L		12/29/21 08:19	12/30/21 14:00	1
Vanadium	6.56		1.00	0.991	ug/L		12/29/21 08:19	12/30/21 14:00	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	46.5		5.00	5.00	mg/L			12/29/21 14:24	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	8.33		0.100	0.0750	mg/L			01/07/22 11:50	1
Ferrous Iron	ND	HF	0.100	0.0750	mg/L			01/05/22 16:00	1

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW04P-122221**

**Lab Sample ID: 180-131730-2**

Matrix: Water

Date Collected: 12/22/21 15:35  
Date Received: 12/23/21 16:20

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.98	1.03	ug/L		12/29/21 10:00	12/30/21 22:32	1
<b>Surrogate</b>									
2-Fluorobiphenyl	48		10 - 105				12/29/21 10:00	12/30/21 22:32	1
2-Fluorophenol (Surr)	46		10 - 105				12/29/21 10:00	12/30/21 22:32	1
Nitrobenzene-d5 (Surr)	50		12 - 105				12/29/21 10:00	12/30/21 22:32	1
Phenol-d5 (Surr)	40		10 - 105				12/29/21 10:00	12/30/21 22:32	1
Terphenyl-d14 (Surr)	77		11 - 132				12/29/21 10:00	12/30/21 22:32	1
2,4,6-Tribromophenol (Surr)	66		10 - 144				12/29/21 10:00	12/30/21 22:32	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	21.1		4.00	1.00	ug/L			12/29/21 15:42	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	419		10.0	7.12	mg/L			12/24/21 13:00	10
Nitrate as N	ND		0.100	0.0230	mg/L			12/24/21 12:47	1
Sulfate	152		1.00	0.756	mg/L			12/24/21 12:47	1

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1140		50.0	19.5	ug/L		01/05/22 11:24	01/06/22 09:16	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	36.4		5.00	5.00	mg/L			12/29/21 14:28	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	1.14		0.100	0.0750	mg/L			01/07/22 11:48	1
Ferrous Iron	ND	HF	0.100	0.0750	mg/L			01/05/22 16:00	1

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW03A-122221**

**Lab Sample ID: 180-131730-3**

Matrix: Water

Date Collected: 12/22/21 17:20  
Date Received: 12/23/21 16:20

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		100	52.6	ug/L		12/29/21 10:00	12/30/21 22:54	1
<b>Surrogate</b>									
2-Fluorobiphenyl	44		10 - 105				12/29/21 10:00	12/30/21 22:54	1
2-Fluorophenol (Surr)	43		10 - 105				12/29/21 10:00	12/30/21 22:54	1
Nitrobenzene-d5 (Surr)	47		12 - 105				12/29/21 10:00	12/30/21 22:54	1
Phenol-d5 (Surr)	41		10 - 105				12/29/21 10:00	12/30/21 22:54	1
Terphenyl-d14 (Surr)	71		11 - 132				12/29/21 10:00	12/30/21 22:54	1
2,4,6-Tribromophenol (Surr)	61		10 - 144				12/29/21 10:00	12/30/21 22:54	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	14.5		4.00	1.00	ug/L			12/29/21 01:27	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	234		5.00	3.56	mg/L			12/24/21 13:24	5
Nitrate as N	ND		0.100	0.0230	mg/L			12/24/21 13:12	1
Sulfate	176		1.00	0.756	mg/L			12/24/21 13:12	1

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	27.9		0.500	0.134	ug/L		12/29/21 08:19	12/30/21 14:04	1
Iron	57300	B	50.0	19.5	ug/L		12/29/21 08:19	12/30/21 14:04	1
Lead	ND		1.00	0.128	ug/L		12/29/21 08:19	12/30/21 14:04	1
Manganese	7450		5.00	0.866	ug/L		12/29/21 08:19	12/30/21 14:04	1
Vanadium	ND		1.00	0.991	ug/L		12/29/21 08:19	12/30/21 14:04	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	24.2		5.00	5.00	mg/L			12/29/21 14:31	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	45.7		0.100	0.0750	mg/L			01/07/22 11:50	1
Ferrous Iron	11.6	HF	0.500	0.375	mg/L			01/05/22 16:00	5

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW01P-122221**

**Lab Sample ID: 180-131730-4**

Matrix: Water

Date Collected: 12/22/21 14:20

Date Received: 12/23/21 16:20

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		10.9	3.79	ug/L		12/29/21 10:00	12/30/21 23:16	1
Naphthalene	12.7		2.07	1.08	ug/L		12/29/21 10:00	12/30/21 23:16	1
<b>Surrogate</b>									
2-Fluorobiphenyl									
61									
10 - 105									
2-Fluorophenol (Surr)									
82									
10 - 105									
Nitrobenzene-d5 (Surr)									
86									
12 - 105									
Phenol-d5 (Surr)									
76									
10 - 105									
Terphenyl-d14 (Surr)									
120									
11 - 132									
2,4,6-Tribromophenol (Surr)									
111									
10 - 144									

## Method: EPA 8270E LL - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.943	J H *-	1.09	0.379	ug/L		02/02/22 08:30	02/03/22 13:55	1
Naphthalene	5.25	H *-	0.207	0.108	ug/L		02/02/22 08:30	02/03/22 13:55	1
<b>Surrogate</b>									
2-Fluorobiphenyl									
17									
10 - 105									
2-Fluorophenol (Surr)									
27									
10 - 105									
Nitrobenzene-d5 (Surr)									
28									
12 - 105									
Phenol-d5 (Surr)									
21									
10 - 105									
Terphenyl-d14 (Surr)									
44									
11 - 132									
2,4,6-Tribromophenol (Surr)									
42									
10 - 144									

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	1.40	J	4.00	1.00	ug/L		12/29/21 16:00		1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000		50.0	35.6	mg/L			12/24/21 14:14	50
Nitrate as N	ND		0.500	0.115	mg/L			12/24/21 14:01	5
Sulfate	643		5.00	3.78	mg/L			12/24/21 14:01	5

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	4.81		0.500	0.134	ug/L		12/29/21 08:19	12/30/21 14:18	1
Iron	1660	B	50.0	19.5	ug/L		12/29/21 08:19	12/30/21 14:18	1
Manganese	1040		5.00	0.866	ug/L		12/29/21 08:19	12/30/21 14:18	1
Vanadium	3.41		1.00	0.991	ug/L		12/29/21 08:19	12/30/21 14:18	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	319		5.00	5.00	mg/L			12/29/21 14:35	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.100	0.0750	mg/L			01/07/22 11:50	1
Ferrous Iron	8.79	HF	0.500	0.375	mg/L			01/05/22 16:00	5

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIMW01A-122121**

**Lab Sample ID: 180-131730-5**

**Matrix: Water**

Date Collected: 12/21/21 11:35

Date Received: 12/23/21 16:20

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	2.74		1.00	0.598	ug/L			12/29/21 19:28	1
Dichlorobromomethane	ND		1.00	0.641	ug/L			12/29/21 19:28	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	70		36 - 124					12/29/21 19:28	1
Dibromofluoromethane (Surr)	116		46 - 149					12/29/21 19:28	1
1,2-Dichloroethane-d4 (Surr)	115		26 - 156					12/29/21 19:28	1
Toluene-d8 (Surr)	91		40 - 146					12/29/21 19:28	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			12/29/21 02:05	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	162		5.00	3.56	mg/L			12/24/21 14:38	5
Nitrate as N	2.08	H H3	0.100	0.0230	mg/L			12/24/21 14:26	1
Sulfate	163		5.00	3.78	mg/L			12/24/21 14:38	5

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	219		5.00	0.866	ug/L			12/29/21 08:19	12/30/21 14:29
Vanadium	2.04		1.00	0.991	ug/L			12/29/21 08:19	12/30/21 14:29

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	82.8		5.00	5.00	mg/L			12/29/21 14:38	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	1.84		0.100	0.0750	mg/L			01/07/22 11:50	1
Ferrous Iron	ND	HF	0.100	0.0750	mg/L			01/05/22 16:00	1

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# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIMW01P-122121**

**Lab Sample ID: 180-131730-6**

**Matrix: Water**

Date Collected: 12/21/21 12:45  
Date Received: 12/23/21 16:20

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.00	0.598	ug/L			12/29/21 19:53	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	76		36 - 124				Prepared	12/29/21 19:53	1
Dibromofluoromethane (Surr)	116		46 - 149					12/29/21 19:53	1
1,2-Dichloroethane-d4 (Surr)	126		26 - 156					12/29/21 19:53	1
Toluene-d8 (Surr)	87		40 - 146					12/29/21 19:53	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	40.3		4.00	1.00	ug/L			12/29/21 02:24	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	84.0		1.00	0.712	mg/L			12/24/21 14:51	1
Nitrate as N	0.464	H H3	0.100	0.0230	mg/L			12/24/21 14:51	1
Sulfate	171		1.00	0.756	mg/L			12/24/21 14:51	1

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	3530		5.00	0.866	ug/L		12/29/21 08:19	12/30/21 14:32	1
Vanadium	ND		1.00	0.991	ug/L		12/29/21 08:19	12/30/21 14:32	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	147		5.00	5.00	mg/L			12/29/21 14:42	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	3.72		0.100	0.0750	mg/L			01/07/22 11:50	1
Ferrous Iron	0.234	HF	0.100	0.0750	mg/L			01/05/22 16:00	1

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW07P-122221**  
Date Collected: 12/22/21 12:55  
Date Received: 12/23/21 16:20

**Lab Sample ID: 180-131730-7**  
Matrix: Water

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	12.5		1.00	0.598	ug/L			12/29/21 20:17	1
Dichlorobromomethane	ND		1.00	0.641	ug/L			12/29/21 20:17	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	62	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
				36 - 124				12/29/21 20:17	1
Dibromofluoromethane (Surr)	117			46 - 149				12/29/21 20:17	1
1,2-Dichloroethane-d4 (Surr)	122			26 - 156				12/29/21 20:17	1
Toluene-d8 (Surr)	84			40 - 146				12/29/21 20:17	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			12/29/21 02:43	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	68.1		1.00	0.712	mg/L			12/24/21 16:29	1
Nitrate as N	1.19	H	0.100	0.0230	mg/L			12/24/21 16:29	1
Sulfate	82.2		1.00	0.756	mg/L			12/24/21 16:29	1

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	6320		50.0	19.5	ug/L		01/05/22 11:24	01/06/22 09:20	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	68.7		5.00	5.00	mg/L			12/29/21 15:02	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	6.32		0.100	0.0750	mg/L			01/07/22 11:50	1
Ferrous Iron	ND	HF	0.100	0.0750	mg/L			01/05/22 16:00	1

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW02A-122221**

**Lab Sample ID: 180-131730-9**

Matrix: Water

Date Collected: 12/22/21 18:45  
Date Received: 12/23/21 16:20

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.00	0.598	ug/L			12/29/21 20:43	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	58		36 - 124				Prepared	12/29/21 20:43	1
Dibromofluoromethane (Surr)	123		46 - 149					12/29/21 20:43	1
1,2-Dichloroethane-d4 (Surr)	124		26 - 156					12/29/21 20:43	1
Toluene-d8 (Surr)	83		40 - 146					12/29/21 20:43	1

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		1.98	0.719	ug/L		12/29/21 10:00	12/30/21 23:38	1
Benzo[a]pyrene	ND		1.98	0.417	ug/L		12/29/21 10:00	12/30/21 23:38	1
Benzo[b]fluoranthene	ND		1.98	0.740	ug/L		12/29/21 10:00	12/30/21 23:38	1
Benzo[k]fluoranthene	ND		1.98	0.677	ug/L		12/29/21 10:00	12/30/21 23:38	1
Dibenz(a,h)anthracene	ND		1.98	0.771	ug/L		12/29/21 10:00	12/30/21 23:38	1
Indeno[1,2,3-cd]pyrene	ND		1.98	0.688	ug/L		12/29/21 10:00	12/30/21 23:38	1
<b>Surrogate</b>									
2-Fluorobiphenyl	38		10 - 105				Prepared	12/29/21 10:00	12/30/21 23:38
2-Fluorophenol (Surr)	38		10 - 105					12/29/21 10:00	12/30/21 23:38
Nitrobenzene-d5 (Surr)	44		12 - 105					12/29/21 10:00	12/30/21 23:38
Phenol-d5 (Surr)	34		10 - 105					12/29/21 10:00	12/30/21 23:38
Terphenyl-d14 (Surr)	63		11 - 132					12/29/21 10:00	12/30/21 23:38
2,4,6-Tribromophenol (Surr)	53		10 - 144					12/29/21 10:00	12/30/21 23:38

## Method: EPA 8270E LL - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND	H *-	0.207	0.0750	ug/L		02/02/22 08:30	02/03/22 14:18	1
Benzo[a]pyrene	ND	H *-	0.207	0.0435	ug/L		02/02/22 08:30	02/03/22 14:18	1
Benzo[b]fluoranthene	ND	H *-	0.207	0.0772	ug/L		02/02/22 08:30	02/03/22 14:18	1
Benzo[k]fluoranthene	ND	H *-	0.207	0.0707	ug/L		02/02/22 08:30	02/03/22 14:18	1
Dibenz(a,h)anthracene	ND	H *-	0.207	0.0804	ug/L		02/02/22 08:30	02/03/22 14:18	1
Indeno[1,2,3-cd]pyrene	ND	H *-	0.207	0.0717	ug/L		02/02/22 08:30	02/03/22 14:18	1
<b>Surrogate</b>									
2-Fluorobiphenyl	14		10 - 105				Prepared	02/02/22 08:30	02/03/22 14:18
2-Fluorophenol (Surr)	20		10 - 105					02/02/22 08:30	02/03/22 14:18
Nitrobenzene-d5 (Surr)	21		12 - 105					02/02/22 08:30	02/03/22 14:18
Phenol-d5 (Surr)	16		10 - 105					02/02/22 08:30	02/03/22 14:18
Terphenyl-d14 (Surr)	33		11 - 132					02/02/22 08:30	02/03/22 14:18
2,4,6-Tribromophenol (Surr)	33		10 - 144					02/02/22 08:30	02/03/22 14:18

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			12/29/21 03:02	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86.5		1.00	0.712	mg/L			12/24/21 15:15	1
Nitrate as N	0.201		0.100	0.0230	mg/L			12/24/21 15:15	1
Sulfate	124		1.00	0.756	mg/L			12/24/21 15:15	1

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# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW02A-122221**

**Lab Sample ID: 180-131730-9**

**Matrix: Water**

Date Collected: 12/22/21 18:45  
Date Received: 12/23/21 16:20

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1330		5.00	0.866	ug/L		12/29/21 08:19	12/30/21 14:36	1
Vanadium	ND		1.00	0.991	ug/L		12/29/21 08:19	12/30/21 14:36	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	42.4		5.00	5.00	mg/L		12/29/21 15:09		1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	0.310		0.100	0.0750	mg/L		01/07/22 11:50		1
Ferrous Iron	ND HF		0.100	0.0750	mg/L		01/05/22 16:00		1

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-DUP1-122321**

**Lab Sample ID: 180-131730-10**

**Matrix: Water**

Date Collected: 12/23/21 00:00  
Date Received: 12/23/21 16:20

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.00	0.598	ug/L			12/29/21 21:07	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	78		36 - 124				Prepared	12/29/21 21:07	1
Dibromofluoromethane (Surr)	115		46 - 149					12/29/21 21:07	1
1,2-Dichloroethane-d4 (Surr)	127		26 - 156					12/29/21 21:07	1
Toluene-d8 (Surr)	82		40 - 146					12/29/21 21:07	1

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		1.90	0.690	ug/L		12/29/21 10:00	12/31/21 00:01	1
Benzo[a]pyrene	ND		1.90	0.400	ug/L		12/29/21 10:00	12/31/21 00:01	1
Benzo[b]fluoranthene	ND		1.90	0.710	ug/L		12/29/21 10:00	12/31/21 00:01	1
Benzo[k]fluoranthene	ND		1.90	0.650	ug/L		12/29/21 10:00	12/31/21 00:01	1
Dibenz(a,h)anthracene	ND		1.90	0.740	ug/L		12/29/21 10:00	12/31/21 00:01	1
Indeno[1,2,3-cd]pyrene	ND		1.90	0.660	ug/L		12/29/21 10:00	12/31/21 00:01	1
<b>Surrogate</b>									
2-Fluorobiphenyl	42		10 - 105				Prepared	12/29/21 10:00	12/31/21 00:01
2-Fluorophenol (Surr)	39		10 - 105					12/29/21 10:00	12/31/21 00:01
Nitrobenzene-d5 (Surr)	45		12 - 105					12/29/21 10:00	12/31/21 00:01
Phenol-d5 (Surr)	35		10 - 105					12/29/21 10:00	12/31/21 00:01
Terphenyl-d14 (Surr)	66		11 - 132					12/29/21 10:00	12/31/21 00:01
2,4,6-Tribromophenol (Surr)	57		10 - 144					12/29/21 10:00	12/31/21 00:01

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			12/29/21 03:21	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	91.0		1.00	0.712	mg/L			12/24/21 15:40	1
Nitrate as N	0.200		0.100	0.0230	mg/L			12/24/21 15:40	1
Sulfate	131		1.00	0.756	mg/L			12/24/21 15:40	1

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1430		5.00	0.866	ug/L		12/29/21 08:19	12/30/21 14:39	1
Vanadium	ND		1.00	0.991	ug/L		12/29/21 08:19	12/30/21 14:39	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	44.4		5.00	5.00	mg/L			12/29/21 15:12	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	0.343		0.100	0.0750	mg/L			01/07/22 11:50	1
Ferrous Iron	ND HF		0.100	0.0750	mg/L			01/05/22 16:00	1

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# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Client Sample ID: EQUIPMENT BLANK

Date Collected: 12/27/21 20:00  
Date Received: 12/29/21 09:00

## Lab Sample ID: 180-131783-1

Matrix: Water

### Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.00	0.307	ug/L			01/03/22 14:59	1
Tetrachloroethene	ND		1.00	0.467	ug/L			01/03/22 14:59	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	63		36 - 124				Prepared	12/30/21 17:35	1
4-Bromofluorobenzene (Surr)	85		36 - 124					01/03/22 14:59	1
Dibromofluoromethane (Surr)	108		46 - 149					12/30/21 17:35	1
Dibromofluoromethane (Surr)	115		46 - 149					01/03/22 14:59	1
1,2-Dichloroethane-d4 (Surr)	112		26 - 156					12/30/21 17:35	1
1,2-Dichloroethane-d4 (Surr)	131		26 - 156					01/03/22 14:59	1
Toluene-d8 (Surr)	83		40 - 146					12/30/21 17:35	1
Toluene-d8 (Surr)	91		40 - 146					01/03/22 14:59	1

### Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		10.4	3.64	ug/L		01/03/22 09:30	01/04/22 15:00	1
Naphthalene	ND		1.98	1.03	ug/L		01/03/22 09:30	01/04/22 15:00	1
<b>Surrogate</b>									
2-Fluorobiphenyl	47		10 - 105				Prepared	01/03/22 09:30	01/04/22 15:00
2-Fluorophenol (Surr)	44		10 - 105					01/03/22 09:30	01/04/22 15:00
Nitrobenzene-d5 (Surr)	51		12 - 105					01/03/22 09:30	01/04/22 15:00
Phenol-d5 (Surr)	38		10 - 105					01/03/22 09:30	01/04/22 15:00
Terphenyl-d14 (Surr)	75		11 - 132					01/03/22 09:30	01/04/22 15:00
2,4,6-Tribromophenol (Surr)	57		10 - 144					01/03/22 09:30	01/04/22 15:00

### Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			01/07/22 11:25	1

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.762	J	1.00	0.712	mg/L			12/30/21 22:14	1
Nitrate as N	0.0302	J H	0.100	0.0230	mg/L			12/30/21 22:14	1
Sulfate	ND		1.00	0.756	mg/L			12/30/21 22:14	1

### Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	2.61	J	5.00	0.866	ug/L		12/30/21 10:25	01/04/22 12:08	1
Vanadium	ND		1.00	0.991	ug/L		12/30/21 10:25	01/04/22 12:08	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.00	5.00	mg/L			01/06/22 16:55	1

### General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	0.249		0.100	0.0750	mg/L			01/07/22 14:45	1
Ferrous Iron	ND	HF	0.100	0.0750	mg/L			01/06/22 15:00	1

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# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW03P-122721**

**Lab Sample ID: 180-131783-2**

**Matrix: Water**

Date Collected: 12/27/21 18:00  
Date Received: 12/29/21 09:00

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	4.59		1.00	0.467	ug/L			12/30/21 18:00	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	89		36 - 124				Prepared	12/30/21 18:00	1
Dibromofluoromethane (Surr)	108		46 - 149					12/30/21 18:00	1
1,2-Dichloroethane-d4 (Surr)	114		26 - 156					12/30/21 18:00	1
Toluene-d8 (Surr)	83		40 - 146					12/30/21 18:00	1

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		10.4	3.64	ug/L		01/03/22 09:30	01/04/22 15:23	1
Naphthalene	8.26		1.98	1.03	ug/L		01/03/22 09:30	01/04/22 15:23	1
<b>Surrogate</b>									
2-Fluorobiphenyl	39		10 - 105				Prepared	01/04/22 15:23	1
2-Fluorophenol (Surr)	37		10 - 105					01/04/22 15:23	1
Nitrobenzene-d5 (Surr)	44		12 - 105					01/04/22 15:23	1
Phenol-d5 (Surr)	32		10 - 105					01/04/22 15:23	1
Terphenyl-d14 (Surr)	49		11 - 132					01/04/22 15:23	1
2,4,6-Tribromophenol (Surr)	47		10 - 144					01/04/22 15:23	1

## Method: EPA 8270E LL - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND	H *-	1.04	0.364	ug/L		02/02/22 08:30	02/03/22 14:41	1
Naphthalene	ND	H *-	0.198	0.103	ug/L		02/02/22 08:30	02/03/22 14:41	1
<b>Surrogate</b>									
2-Fluorobiphenyl	14		10 - 105				Prepared	02/03/22 14:41	1
2-Fluorophenol (Surr)	24		10 - 105					02/03/22 14:41	1
Nitrobenzene-d5 (Surr)	26		12 - 105					02/03/22 14:41	1
Phenol-d5 (Surr)	21		10 - 105					02/03/22 14:41	1
Terphenyl-d14 (Surr)	36		11 - 132					02/03/22 14:41	1
2,4,6-Tribromophenol (Surr)	43		10 - 144					02/03/22 14:41	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	1040		352	88.0	ug/L			01/07/22 11:06	88

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	157		1.00	0.712	mg/L			12/30/21 23:27	1
Nitrate as N	0.0404	J H	0.100	0.0230	mg/L			12/30/21 23:27	1
Sulfate	232		5.00	3.78	mg/L			12/30/21 23:41	5

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	1.20		1.00	0.991	ug/L		12/30/21 10:25	01/04/22 12:11	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	38.6		5.00	5.00	mg/L			01/06/22 19:36	1

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# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW03P-122721**  
**Date Collected: 12/27/21 18:00**  
**Date Received: 12/29/21 09:00**

**Lab Sample ID: 180-131783-2**  
**Matrix: Water**

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	0.855		0.100	0.0750	mg/L			01/07/22 14:45	1
Ferrous Iron	ND	HF	0.100	0.0750	mg/L			01/06/22 15:00	1

# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW02P-122721**  
Date Collected: 12/27/21 14:00  
Date Received: 12/29/21 09:00

**Lab Sample ID: 180-131783-3**  
Matrix: Water

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.98	1.03	ug/L		01/03/22 09:30	01/04/22 15:45	1
<b>Surrogate</b>									
2-Fluorobiphenyl	47	%Recovery	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	45		10 - 105				01/03/22 09:30	01/04/22 15:45	1
Nitrobenzene-d5 (Surr)	53		10 - 105				01/03/22 09:30	01/04/22 15:45	1
Phenol-d5 (Surr)	37		10 - 105				01/03/22 09:30	01/04/22 15:45	1
Terphenyl-d14 (Surr)	64		11 - 132				01/03/22 09:30	01/04/22 15:45	1
2,4,6-Tribromophenol (Surr)	57		10 - 144				01/03/22 09:30	01/04/22 15:45	1

## Method: EPA 8270E LL - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND	H *-	0.198	0.103	ug/L		02/02/22 08:30	02/03/22 15:04	1
<b>Surrogate</b>									
2-Fluorobiphenyl	18	%Recovery	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	27		10 - 105				02/02/22 08:30	02/03/22 15:04	1
Nitrobenzene-d5 (Surr)	26		10 - 105				02/02/22 08:30	02/03/22 15:04	1
Phenol-d5 (Surr)	22		10 - 105				02/02/22 08:30	02/03/22 15:04	1
Terphenyl-d14 (Surr)	34		11 - 132				02/02/22 08:30	02/03/22 15:04	1
2,4,6-Tribromophenol (Surr)	38		10 - 144				02/02/22 08:30	02/03/22 15:04	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	349		44.0	11.0	ug/L			01/07/22 12:22	11

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	93.5		1.00	0.712	mg/L			12/30/21 23:56	1
Nitrate as N	ND	H	0.100	0.0230	mg/L			12/30/21 23:56	1
Sulfate	127		1.00	0.756	mg/L			12/30/21 23:56	1

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	2.27		1.00	0.991	ug/L		12/30/21 10:25	01/04/22 12:15	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	58.0		5.00	5.00	mg/L			01/06/22 16:43	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	ND		0.100	0.0750	mg/L			01/07/22 14:45	1
Ferrous Iron	ND	HF	0.100	0.0750	mg/L			01/06/22 15:00	1

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# Client Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

**Client Sample ID: GW-RJ-VIIMW01A-122721**

**Lab Sample ID: 180-131783-4**

**Matrix: Water**

Date Collected: 12/27/21 12:30

Date Received: 12/29/21 09:00

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND	*+	1.00	0.598	ug/L			12/30/21 16:20	1
<b>1,1-Dichloroethane</b>	<b>1.79</b>		1.00	0.307	ug/L			12/30/21 16:20	1
<b>Surrogate</b>									
4-Bromofluorobenzene (Surr)	75		36 - 124				Prepared	12/30/21 16:20	1
Dibromofluoromethane (Surr)	111		46 - 149					12/30/21 16:20	1
1,2-Dichloroethane-d4 (Surr)	118		26 - 156					12/30/21 16:20	1
Toluene-d8 (Surr)	86		40 - 146					12/30/21 16:20	1

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	161		4.00	1.00	ug/L			01/07/22 10:29	1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	215		5.00	3.56	mg/L			01/02/22 12:37	5
Nitrate as N	0.0795	J H	0.100	0.0230	mg/L			01/02/22 12:22	1
Sulfate	254		5.00	3.78	mg/L			01/02/22 12:37	5

## Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1110		5.00	0.866	ug/L		12/30/21 10:25	01/04/22 12:18	1
Vanadium	6.17		1.00	0.991	ug/L		12/30/21 10:25	01/04/22 12:18	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	64.8		5.00	5.00	mg/L			01/06/22 15:07	1

## General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferric Iron	4.76		0.100	0.0750	mg/L			01/07/22 14:45	1
Ferrous Iron	0.276	HF F1	0.100	0.0750	mg/L			01/06/22 15:00	1

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 180-383673/8**

**Matrix: Water**

**Analysis Batch: 383673**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.00	0.598	ug/L			12/29/21 13:13	1
Dichlorobromomethane	ND		1.00	0.641	ug/L			12/29/21 13:13	1
1,1-Dichloroethane	ND		1.00	0.307	ug/L			12/29/21 13:13	1
Tetrachloroethylene	ND		1.00	0.467	ug/L			12/29/21 13:13	1

**MB MB**

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	60		36 - 124		12/29/21 13:13	1
Dibromofluoromethane (Surr)	98		46 - 149		12/29/21 13:13	1
1,2-Dichloroethane-d4 (Surr)	104		26 - 156		12/29/21 13:13	1
Toluene-d8 (Surr)	73		40 - 146		12/29/21 13:13	1

**Lab Sample ID: LCS 180-383673/3**

**Matrix: Water**

**Analysis Batch: 383673**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Chloroform	10.0	10.70		ug/L		107	66 - 125	
Dichlorobromomethane	10.0	10.04		ug/L		100	64 - 130	
1,1-Dichloroethane	10.0	9.973		ug/L		100	63 - 127	
Tetrachloroethylene	10.0	9.818		ug/L		98	55 - 140	

**LCS LCS**

Surrogate	%Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		36 - 124
Dibromofluoromethane (Surr)	100		46 - 149
1,2-Dichloroethane-d4 (Surr)	99		26 - 156
Toluene-d8 (Surr)	91		40 - 146

**Lab Sample ID: MB 180-383765/8**

**Matrix: Water**

**Analysis Batch: 383765**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.00	0.598	ug/L			12/30/21 10:38	1
Dichlorobromomethane	ND		1.00	0.641	ug/L			12/30/21 10:38	1
1,1-Dichloroethane	ND		1.00	0.307	ug/L			12/30/21 10:38	1
Tetrachloroethylene	ND		1.00	0.467	ug/L			12/30/21 10:38	1

**MB MB**

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	62		36 - 124		12/30/21 10:38	1
Dibromofluoromethane (Surr)	112		46 - 149		12/30/21 10:38	1
1,2-Dichloroethane-d4 (Surr)	122		26 - 156		12/30/21 10:38	1
Toluene-d8 (Surr)	80		40 - 146		12/30/21 10:38	1

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 180-383765/6**

**Matrix: Water**

**Analysis Batch: 383765**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
		*	+	ug/L		Limits	
Chloroform	10.0	12.88	*+	ug/L		129	66 - 125
Dichlorobromomethane	10.0	11.64		ug/L		116	64 - 130
1,1-Dichloroethane	10.0	10.67		ug/L		107	63 - 127
Tetrachloroethylene	10.0	10.52		ug/L		105	55 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		36 - 124
Dibromofluoromethane (Surr)	110		46 - 149
1,2-Dichloroethane-d4 (Surr)	117		26 - 156
Toluene-d8 (Surr)	90		40 - 146

**Lab Sample ID: 180-131783-4 MS**

**Matrix: Water**

**Analysis Batch: 383765**

**Client Sample ID: GW-RJ-VIIMW01A-122721**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
		*	+	ug/L				Limits	
Chloroform	ND	*+	10.0	11.59		ug/L		116	66 - 125
Dichlorobromomethane	ND		10.0	10.89		ug/L		109	64 - 130
1,1-Dichloroethane	1.79		10.0	12.50		ug/L		107	63 - 127
Tetrachloroethylene	2.99		10.0	14.02		ug/L		110	55 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		36 - 124
Dibromofluoromethane (Surr)	108		46 - 149
1,2-Dichloroethane-d4 (Surr)	115		26 - 156
Toluene-d8 (Surr)	93		40 - 146

**Lab Sample ID: 180-131783-4 MSD**

**Matrix: Water**

**Analysis Batch: 383765**

**Client Sample ID: GW-RJ-VIIMW01A-122721**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD
		*	+	ug/L				Limits		RPD Limit
Chloroform	ND	*+	10.0	11.90		ug/L		119	66 - 125	3 25
Dichlorobromomethane	ND		10.0	11.05		ug/L		111	64 - 130	1 25
1,1-Dichloroethane	1.79		10.0	12.82		ug/L		110	63 - 127	3 25
Tetrachloroethylene	2.99		10.0	14.46		ug/L		115	55 - 140	3 27

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		36 - 124
Dibromofluoromethane (Surr)	110		46 - 149
1,2-Dichloroethane-d4 (Surr)	115		26 - 156
Toluene-d8 (Surr)	97		40 - 146

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID:** MB 180-383968/9

**Matrix:** Water

**Analysis Batch:** 383968

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloroform	ND		1.00	0.598	ug/L			01/03/22 12:39	1
Dichlorobromomethane	ND		1.00	0.641	ug/L			01/03/22 12:39	1
1,1-Dichloroethane	ND		1.00	0.307	ug/L			01/03/22 12:39	1
Tetrachloroethylene	ND		1.00	0.467	ug/L			01/03/22 12:39	1
Surrogate	MB	MB	%Recovery	Qualifier	Limits	D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)	81		36 - 124					01/03/22 12:39	1
Dibromofluoromethane (Surr)	120		46 - 149					01/03/22 12:39	1
1,2-Dichloroethane-d4 (Surr)	129		26 - 156					01/03/22 12:39	1
Toluene-d8 (Surr)	104		40 - 146					01/03/22 12:39	1

**Lab Sample ID:** LCS 180-383968/4

**Matrix:** Water

**Analysis Batch:** 383968

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	MB	MB	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				
Chloroform			10.0	9.695		ug/L		97	66 - 125
Dichlorobromomethane			10.0	7.923		ug/L		79	64 - 130
1,1-Dichloroethane			10.0	8.133		ug/L		81	63 - 127
Tetrachloroethylene			10.0	8.939		ug/L		89	55 - 140
Surrogate	MB	MB	%Recovery	LCS	LCS	Unit	D	%Rec	%Rec.
	%Recovery	Qualifier		Result	Qualifier				
4-Bromofluorobenzene (Surr)	87		36 - 124						
Dibromofluoromethane (Surr)	83		46 - 149						
1,2-Dichloroethane-d4 (Surr)	91		26 - 156						
Toluene-d8 (Surr)	75		40 - 146						

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID:** MB 180-383702/1-A

**Matrix:** Water

**Analysis Batch:** 383841

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 383702

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzo[a]anthracene	ND		1.90	0.690	ug/L		12/29/21 10:00	12/30/21 14:27	1
Benzo[a]pyrene	ND		1.90	0.400	ug/L		12/29/21 10:00	12/30/21 14:27	1
Benzo[b]fluoranthene	ND		1.90	0.710	ug/L		12/29/21 10:00	12/30/21 14:27	1
Benzo[k]fluoranthene	ND		1.90	0.650	ug/L		12/29/21 10:00	12/30/21 14:27	1
1,1'-Biphenyl	ND		10.0	3.49	ug/L		12/29/21 10:00	12/30/21 14:27	1
Bis(2-ethylhexyl) phthalate	ND		100	52.6	ug/L		12/29/21 10:00	12/30/21 14:27	1
Dibenz(a,h)anthracene	ND		1.90	0.740	ug/L		12/29/21 10:00	12/30/21 14:27	1
Indeno[1,2,3-cd]pyrene	ND		1.90	0.660	ug/L		12/29/21 10:00	12/30/21 14:27	1
Naphthalene	ND		1.90	0.990	ug/L		12/29/21 10:00	12/30/21 14:27	1
Surrogate	MB	MB	%Recovery	LCS	LCS	Unit	D	%Rec	%Rec.
	%Recovery	Qualifier		Result	Qualifier				
2-Fluorobiphenyl	24		10 - 105						
2-Fluorophenol (Surr)	27		10 - 105						
Nitrobenzene-d5 (Surr)	29		12 - 105						

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 180-383702/1-A

**Matrix:** Water

**Analysis Batch:** 383841

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 383702

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5 (Surr)		28			10 - 105	12/29/21 10:00	12/30/21 14:27	1
Terphenyl-d14 (Surr)		63			11 - 132	12/29/21 10:00	12/30/21 14:27	1
2,4,6-Tribromophenol (Surr)		34			10 - 144	12/29/21 10:00	12/30/21 14:27	1

**Lab Sample ID:** LCS 180-383702/2-A

**Matrix:** Water

**Analysis Batch:** 383841

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 383702

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Benzo[a]anthracene	200	142.2		ug/L	71	10 - 130		
Benzo[a]pyrene	200	147.1		ug/L	74	10 - 130		
Benzo[b]fluoranthene	200	137.8		ug/L	69	10 - 130		
Benzo[k]fluoranthene	200	130.3		ug/L	65	10 - 130		
1,1'-Biphenyl	200	94.79		ug/L	47	10 - 130		
Bis(2-ethylhexyl) phthalate	200	166.5		ug/L	83	10 - 130		
Dibenz(a,h)anthracene	200	148.4		ug/L	74	10 - 130		
Indeno[1,2,3-cd]pyrene	200	145.6		ug/L	73	10 - 130		
Naphthalene	200	66.10		ug/L	33	10 - 130		

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	60		10 - 105
2-Fluorophenol (Surr)	51		10 - 105
Nitrobenzene-d5 (Surr)	60		12 - 105
Phenol-d5 (Surr)	48		10 - 105
Terphenyl-d14 (Surr)	83		11 - 132
2,4,6-Tribromophenol (Surr)	79		10 - 144

**Lab Sample ID:** LCSD 180-383702/3-A

**Matrix:** Water

**Analysis Batch:** 383841

**Client Sample ID:** Lab Control Sample Dup

**Prep Type:** Total/NA

**Prep Batch:** 383702

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	RPD	RPD Limit
Benzo[a]anthracene	200	125.9		ug/L	63	10 - 130	12	25	
Benzo[a]pyrene	200	130.8		ug/L	65	10 - 130	12	25	
Benzo[b]fluoranthene	200	121.5		ug/L	61	10 - 130	13	25	
Benzo[k]fluoranthene	200	115.1		ug/L	58	10 - 130	12	25	
1,1'-Biphenyl	200	80.28		ug/L	40	10 - 130	17	25	
Bis(2-ethylhexyl) phthalate	200	147.2		ug/L	74	10 - 130	12	25	
Dibenz(a,h)anthracene	200	127.2		ug/L	64	10 - 130	15	25	
Indeno[1,2,3-cd]pyrene	200	127.4		ug/L	64	10 - 130	13	25	
Naphthalene	200	58.73		ug/L	29	10 - 130	12	25	

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	52		10 - 105
2-Fluorophenol (Surr)	44		10 - 105
Nitrobenzene-d5 (Surr)	54		12 - 105
Phenol-d5 (Surr)	41		10 - 105
Terphenyl-d14 (Surr)	73		11 - 132

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 180-383702/3-A**

**Matrix: Water**

**Analysis Batch: 383841**

Surrogate	LCSD	LCSD	
	%Recovery	Qualifier	Limits
2,4,6-Tribromophenol (Surr)	69		10 - 144

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 383702**

**Lab Sample ID: MB 180-384027/1-A**

**Matrix: Water**

**Analysis Batch: 384099**

Analyte	MB	MB			D	Prepared	Analyzed	Dil Fac
	Result	Qualifier	RL	MDL	Unit			
1,1'-Biphenyl	ND		10.0	3.49	ug/L	01/03/22 09:30	01/04/22 09:48	1
Naphthalene	ND		1.90	0.990	ug/L	01/03/22 09:30	01/04/22 09:48	1

Surrogate	MB	MB			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier	Limits					
2-Fluorobiphenyl	50		10 - 105			01/03/22 09:30	01/04/22 09:48	1
2-Fluorophenol (Surr)	52		10 - 105			01/03/22 09:30	01/04/22 09:48	1
Nitrobenzene-d5 (Surr)	58		12 - 105			01/03/22 09:30	01/04/22 09:48	1
Phenol-d5 (Surr)	50		10 - 105			01/03/22 09:30	01/04/22 09:48	1
Terphenyl-d14 (Surr)	84		11 - 132			01/03/22 09:30	01/04/22 09:48	1
2,4,6-Tribromophenol (Surr)	66		10 - 144			01/03/22 09:30	01/04/22 09:48	1

**Lab Sample ID: LCS 180-384027/2-A**

**Matrix: Water**

**Analysis Batch: 384099**

Analyte		Spike	LCS	LCS		%Rec.
		Added	Result	Qualifier	Unit	Limits
1,1'-Biphenyl		200	69.31		ug/L	35
Naphthalene		200	51.17		ug/L	26

Surrogate	LCS	LCS			D	%Rec.
	%Recovery	Qualifier	Limits			
2-Fluorobiphenyl	40		10 - 105			
2-Fluorophenol (Surr)	32		10 - 105			
Nitrobenzene-d5 (Surr)	41		12 - 105			
Phenol-d5 (Surr)	31		10 - 105			
Terphenyl-d14 (Surr)	75		11 - 132			
2,4,6-Tribromophenol (Surr)	62		10 - 144			

**Lab Sample ID: LCSD 180-384027/3-A**

**Matrix: Water**

**Analysis Batch: 384099**

Analyte		Spike	LCSD	LCSD		%Rec.
		Added	Result	Qualifier	Unit	RPD
1,1'-Biphenyl		200	71.25		ug/L	3
Naphthalene		200	52.08		ug/L	25

Surrogate	LCSD	LCSD			D	%Rec.
	%Recovery	Qualifier	Limits			
2-Fluorobiphenyl	40		10 - 105			
2-Fluorophenol (Surr)	32		10 - 105			
Nitrobenzene-d5 (Surr)	41		12 - 105			
Phenol-d5 (Surr)	31		10 - 105			

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 384027**

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** LCSD 180-384027/3-A

**Matrix:** Water

**Analysis Batch:** 384099

**Client Sample ID:** Lab Control Sample Dup

**Prep Type:** Total/NA

**Prep Batch:** 384027

Surrogate	LCSD	LCSD	
	%Recovery	Qualifier	Limits
Terphenyl-d14 (Surr)	71		11 - 132
2,4,6-Tribromophenol (Surr)	58		10 - 144

## Method: EPA 8270E LL - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID:** MB 180-387059/1-A

**Matrix:** Water

**Analysis Batch:** 387126

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 387059

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene			ND		0.190	0.0690	ug/L		02/02/22 08:30	02/03/22 08:58	1
Benzo[a]pyrene			ND		0.190	0.0400	ug/L		02/02/22 08:30	02/03/22 08:58	1
Benzo[b]fluoranthene			ND		0.190	0.0710	ug/L		02/02/22 08:30	02/03/22 08:58	1
Benzo[k]fluoranthene			ND		0.190	0.0650	ug/L		02/02/22 08:30	02/03/22 08:58	1
1,1'-Biphenyl			ND		1.00	0.349	ug/L		02/02/22 08:30	02/03/22 08:58	1
Dibenz(a,h)anthracene			ND		0.190	0.0740	ug/L		02/02/22 08:30	02/03/22 08:58	1
Indeno[1,2,3-cd]pyrene			ND		0.190	0.0660	ug/L		02/02/22 08:30	02/03/22 08:58	1
Naphthalene			ND		0.190	0.0990	ug/L		02/02/22 08:30	02/03/22 08:58	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl			12		10 - 105	02/02/22 08:30	02/03/22 08:58	1
2-Fluorophenol (Surr)			18		10 - 105	02/02/22 08:30	02/03/22 08:58	1
Nitrobenzene-d5 (Surr)			18		12 - 105	02/02/22 08:30	02/03/22 08:58	1
Phenol-d5 (Surr)			15		10 - 105	02/02/22 08:30	02/03/22 08:58	1
Terphenyl-d14 (Surr)			29		11 - 132	02/02/22 08:30	02/03/22 08:58	1
2,4,6-Tribromophenol (Surr)			26		10 - 144	02/02/22 08:30	02/03/22 08:58	1

**Lab Sample ID:** LCS 180-387059/2-A

**Matrix:** Water

**Analysis Batch:** 387126

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 387059

Analyte	Spike	LCS	LCS	%Rec.				
	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzo[a]anthracene	20.0	6.226	*-	ug/L		31	48 - 100	
Benzo[a]pyrene	20.0	4.394	*-	ug/L		22	46 - 100	
Benzo[b]fluoranthene	20.0	4.530	*-	ug/L		23	46 - 100	
Benzo[k]fluoranthene	20.0	4.899	*-	ug/L		24	45 - 100	
1,1'-Biphenyl	20.0	0.8426	J *-	ug/L		4	49 - 100	
Bis(2-ethylhexyl) phthalate	20.0	6.404	J *-	ug/L		32	45 - 105	
Dibenz(a,h)anthracene	20.0	4.895	*-	ug/L		24	48 - 100	
Indeno[1,2,3-cd]pyrene	20.0	4.839	*-	ug/L		24	48 - 100	
Naphthalene	20.0	1.408	*-	ug/L		7	50 - 100	

Surrogate	LCS	LCS	
	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	16		10 - 105
2-Fluorophenol (Surr)	23		10 - 105
Nitrobenzene-d5 (Surr)	21		12 - 105
Phenol-d5 (Surr)	21		10 - 105
Terphenyl-d14 (Surr)	31		11 - 132

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 8270E LL - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 180-387059/2-A**

**Matrix: Water**

**Analysis Batch: 387126**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 387059**

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
2,4,6-Tribromophenol (Surr)			31		10 - 144

**Lab Sample ID: LCSD 180-387059/3-A**

**Matrix: Water**

**Analysis Batch: 387126**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 387059**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzo[a]anthracene	20.0	5.818	*-	ug/L	29	48 - 100	7	16	
Benzo[a]pyrene	20.0	4.267	*-	ug/L	21	46 - 100	3	18	
Benzo[b]fluoranthene	20.0	4.397	*-	ug/L	22	46 - 100	3	23	
Benzo[k]fluoranthene	20.0	4.403	*-	ug/L	22	45 - 100	11	25	
1,1'-Biphenyl	20.0	0.7663	J *-	ug/L	4	49 - 100	9	22	
Bis(2-ethylhexyl) phthalate	20.0	6.026	J *-	ug/L	30	45 - 105	6	17	
Dibenz(a,h)anthracene	20.0	4.644	*-	ug/L	23	48 - 100	5	15	
Indeno[1,2,3-cd]pyrene	20.0	4.779	*-	ug/L	24	48 - 100	1	15	
Naphthalene	20.0	1.325	*-	ug/L	7	50 - 100	6	16	

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
2-Fluorobiphenyl			16		10 - 105
2-Fluorophenol (Surr)			22		10 - 105
Nitrobenzene-d5 (Surr)			21		12 - 105
Phenol-d5 (Surr)			19		10 - 105
Terphenyl-d14 (Surr)			30		11 - 132
2,4,6-Tribromophenol (Surr)			28		10 - 144

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 480-610258/27**

**Matrix: Water**

**Analysis Batch: 610258**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			12/28/21 22:57	1

**Lab Sample ID: LCS 480-610258/28**

**Matrix: Water**

**Analysis Batch: 610258**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Methane	19.2	21.14		ug/L	110	85 - 120	

**Lab Sample ID: LCSD 480-610258/29**

**Matrix: Water**

**Analysis Batch: 610258**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	Limits	RPD	Limit
Methane	19.2	21.23		ug/L	110	85 - 120	0	50	

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: RSK-175 - Dissolved Gases (GC) (Continued)

**Lab Sample ID: MB 480-610374/3**

**Matrix: Water**

**Analysis Batch: 610374**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			12/29/21 13:44	1

**Lab Sample ID: LCS 480-610374/4**

**Matrix: Water**

**Analysis Batch: 610374**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec. Limits
Methane	19.2	21.80		ug/L	113	85 - 120

**Lab Sample ID: LCSD 480-610374/5**

**Matrix: Water**

**Analysis Batch: 610374**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec. Limits	RPD	RPD Limit
Methane	19.2	21.60		ug/L	112	85 - 120	1	50

**Lab Sample ID: MB 480-611059/3**

**Matrix: Water**

**Analysis Batch: 611059**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		4.00	1.00	ug/L			01/07/22 09:32	1

**Lab Sample ID: LCS 480-611059/4**

**Matrix: Water**

**Analysis Batch: 611059**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec. Limits
Methane	19.2	19.61		ug/L	102	85 - 120

**Lab Sample ID: LCSD 480-611059/5**

**Matrix: Water**

**Analysis Batch: 611059**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec. Limits	RPD	RPD Limit
Methane	19.2	18.64		ug/L	97	85 - 120	5	50

**Lab Sample ID: 180-131783-4 MS**

**Matrix: Water**

**Analysis Batch: 611059**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec. Limits
Methane	161		19.2	211.3	4	ug/L	260	38 - 150

**Lab Sample ID: 180-131783-4 MSD**

**Matrix: Water**

**Analysis Batch: 611059**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec. Limits	RPD	RPD Limit
Methane	161		19.2	193.5	4	ug/L	167	38 - 150	9	50

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-383425/7**

**Matrix: Water**

**Analysis Batch: 383425**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.712	mg/L			12/24/21 11:38	1
Nitrate as N	ND		0.100	0.0230	mg/L			12/24/21 11:38	1
Sulfate	ND		1.00	0.756	mg/L			12/24/21 11:38	1

**Lab Sample ID: LCS 180-383425/5**

**Matrix: Water**

**Analysis Batch: 383425**

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride		50.0	49.52		mg/L		99	90 - 110
Nitrate as N		2.50	2.497		mg/L		100	90 - 110
Sulfate		50.0	49.66		mg/L		99	90 - 110

**Lab Sample ID: 180-131730-1 MS**

**Matrix: Water**

**Analysis Batch: 383425**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	157		250	413.7		mg/L		103	90 - 110
Nitrate as N	3.41	H H3	12.5	17.15		mg/L		110	90 - 110
Sulfate	434	F1	250	692.0		mg/L		103	90 - 110

**Lab Sample ID: 180-131730-1 MSD**

**Matrix: Water**

**Analysis Batch: 383425**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	157		250	390.9		mg/L		94	90 - 110	6	20
Nitrate as N	3.41	H H3	12.5	16.19		mg/L		102	90 - 110	6	20
Sulfate	434	F1	250	643.4	F1	mg/L		84	90 - 110	7	20

**Lab Sample ID: MB 180-383829/7**

**Matrix: Water**

**Analysis Batch: 383829**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.712	mg/L			12/30/21 13:29	1
Nitrate as N	ND		0.100	0.0230	mg/L			12/30/21 13:29	1
Sulfate	ND		1.00	0.756	mg/L			12/30/21 13:29	1

**Lab Sample ID: LCS 180-383829/6**

**Matrix: Water**

**Analysis Batch: 383829**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.97		mg/L		100	90 - 110
Nitrate as N	2.50	2.528		mg/L		101	90 - 110
Sulfate	50.0	50.47		mg/L		101	90 - 110

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 180-383924/7**

**Matrix: Water**

**Analysis Batch: 383924**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.712	mg/L			01/02/22 11:57	1
Nitrate as N	ND		0.100	0.0230	mg/L			01/02/22 11:57	1
Sulfate	ND		1.00	0.756	mg/L			01/02/22 11:57	1

**Lab Sample ID: LCS 180-383924/6**

**Matrix: Water**

**Analysis Batch: 383924**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride		50.0	49.78		mg/L		100	90 - 110
Nitrate as N		2.50	2.519		mg/L		101	90 - 110
Sulfate		50.0	50.40		mg/L		101	90 - 110

**Lab Sample ID: 180-131783-4 MS**

**Matrix: Water**

**Analysis Batch: 383924**

**Client Sample ID: GW-RJ-VIIMW01A-122721**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	215		250	455.3		mg/L		96	90 - 110
Nitrate as N	ND	H	12.5	12.80	H	mg/L		102	90 - 110
Sulfate	254		250	502.3		mg/L		99	90 - 110

**Lab Sample ID: 180-131783-4 MSD**

**Matrix: Water**

**Analysis Batch: 383924**

**Client Sample ID: GW-RJ-VIIMW01A-122721**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	215		250	451.2		mg/L		94	90 - 110	1	20
Nitrate as N	ND	H	12.5	12.70	H	mg/L		102	90 - 110	1	20
Sulfate	254		250	496.0		mg/L		97	90 - 110	1	20

## Method: EPA 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 180-383653/1-A**

**Matrix: Water**

**Analysis Batch: 384060**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 383653**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.500	0.134	ug/L		12/29/21 08:19	12/30/21 13:53	1
Iron	28.90	J	50.0	19.5	ug/L		12/29/21 08:19	12/30/21 13:53	1
Lead	ND		1.00	0.128	ug/L		12/29/21 08:19	12/30/21 13:53	1
Manganese	ND		5.00	0.866	ug/L		12/29/21 08:19	12/30/21 13:53	1
Vanadium	ND		1.00	0.991	ug/L		12/29/21 08:19	12/30/21 13:53	1

**Lab Sample ID: LCS 180-383653/2-A**

**Matrix: Water**

**Analysis Batch: 384060**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 383653**

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt		500	514.0		ug/L		103	80 - 120

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 180-383653/2-A**

**Matrix: Water**

**Analysis Batch: 384060**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 383653**

**%Rec.**

**Limits**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Iron	5000	5069		ug/L	101	80 - 120	
Lead	500	503.9		ug/L	101	80 - 120	
Manganese	500	489.2		ug/L	98	80 - 120	
Vanadium	500	504.2		ug/L	101	80 - 120	

**Lab Sample ID: MB 180-383822/1-A**

**Matrix: Water**

**Analysis Batch: 384204**

**Client Sample ID: Method Blank**

**Prep Type: Total Recoverable**

**Prep Batch: 383822**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		5.00	0.866	ug/L		12/30/21 10:25	01/04/22 17:08	1
Vanadium	ND		1.00	0.991	ug/L		12/30/21 10:25	01/04/22 17:08	1

**Lab Sample ID: LCS 180-383822/2-A**

**Matrix: Water**

**Analysis Batch: 384204**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 383822**

**%Rec.**

**Limits**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Manganese	500	514.1		ug/L	103	80 - 120	
Vanadium	500	517.9		ug/L	104	80 - 120	

**Lab Sample ID: MB 180-384190/1-A**

**Matrix: Water**

**Analysis Batch: 384445**

**Client Sample ID: Method Blank**

**Prep Type: Total Recoverable**

**Prep Batch: 384190**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		50.0	19.5	ug/L		01/05/22 11:24	01/06/22 07:27	1

**Lab Sample ID: LCS 180-384190/2-A**

**Matrix: Water**

**Analysis Batch: 384445**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 384190**

**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Iron	5000	5360		ug/L	107	80 - 120	

**Lab Sample ID: 180-131730-3 MS**

**Matrix: Water**

**Analysis Batch: 384060**

**Client Sample ID: GW-RJ-VIIMW03A-122221**

**Prep Type: Dissolved**

**Prep Batch: 383653**

**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cobalt	27.9		500	538.3		ug/L	102	75 - 125	
Iron	57300	B	5000	61970	4	ug/L	93	75 - 125	
Lead	ND		500	502.7		ug/L	101	75 - 125	
Manganese	7450		500	7924	4	ug/L	95	75 - 125	
Vanadium	ND		500	501.3		ug/L	100	75 - 125	

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: EPA 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 180-131730-3 MSD**

**Matrix: Water**

**Analysis Batch: 384060**

**Client Sample ID: GW-RJ-VIIMW03A-122221**

**Prep Type: Dissolved**

**Prep Batch: 383653**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	27.9		500	527.3		ug/L		100	75 - 125	2	20
Iron	57300	B	5000	60800	4	ug/L		70	75 - 125	2	20
Lead	ND		500	492.7		ug/L		99	75 - 125	2	20
Manganese	7450		500	7758	4	ug/L		62	75 - 125	2	20
Vanadium	ND		500	497.4		ug/L		99	75 - 125	1	20

**Lab Sample ID: 180-131783-4 MS**

**Matrix: Water**

**Analysis Batch: 384204**

**Client Sample ID: GW-RJ-VIIMW01A-122721**

**Prep Type: Dissolved**

**Prep Batch: 383822**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	1110		500	1648		ug/L		108	75 - 125		
Vanadium	6.17		500	525.6		ug/L		104	75 - 125		

**Lab Sample ID: 180-131783-4 MSD**

**Matrix: Water**

**Analysis Batch: 384204**

**Client Sample ID: GW-RJ-VIIMW01A-122721**

**Prep Type: Dissolved**

**Prep Batch: 383822**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	1110		500	1661		ug/L		111	75 - 125	1	20
Vanadium	6.17		500	521.7		ug/L		103	75 - 125	1	20

## Method: SM 3500 FE D - Iron, Ferrous and Ferric

**Lab Sample ID: MB 480-610910/29**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.100	0.0750	mg/L			01/05/22 16:00	1

**Lab Sample ID: MB 480-610910/3**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.100	0.0750	mg/L			01/05/22 16:00	1

**Lab Sample ID: LCS 480-610910/30**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	2.00	2.007		mg/L		100	90 - 110

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: SM 3500 FE D - Iron, Ferrous and Ferric (Continued)

**Lab Sample ID: LCS 480-610910/4**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	%Rec. Limits
Ferrous Iron	2.00	1.941		mg/L	97	90 - 110	

**Lab Sample ID: MB 480-611030/3**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.100	0.0750	mg/L			01/06/22 15:00	1

**Lab Sample ID: LCS 480-611030/4**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	%Rec. Limits
Ferrous Iron	2.00	1.983		mg/L	99	90 - 110	

**Lab Sample ID: 180-131730-1 MS**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIMW02AR-122121**  
**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	%Rec. Limits
Ferrous Iron	ND	HF	1.00	0.9626		mg/L	96	70 - 130	

**Lab Sample ID: 180-131730-6 MS**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIMW01P-122121**  
**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	%Rec. Limits
Ferrous Iron	0.234	HF	1.00	1.029		mg/L	80	70 - 130	

**Lab Sample ID: 180-131730-1 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIMW02AR-122121**  
**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131730-2 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIIMW04P-122221**  
**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131730-3 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIIMW03A-122221**  
**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	11.6	HF	11.56		mg/L		0	20

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: SM 3500 FE D - Iron, Ferrous and Ferric

**Lab Sample ID: 180-131730-4 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIIMW01P-122221**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	8.79	HF	8.762		mg/L		0.3	20

**Lab Sample ID: 180-131730-5 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIMW01A-122121**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131730-6 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIMW01P-122121**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	0.234	HF	0.2275		mg/L		3	20

**Lab Sample ID: 180-131730-7 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIIMW07P-122221**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131730-9 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-VIIMW02A-122221**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131730-10 DU**

**Matrix: Water**

**Analysis Batch: 610910**

**Client Sample ID: GW-RJ-DUP1-122321**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131783-4 MS**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: GW-RJ-VIIMW01A-122721**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Ferrous Iron	0.276	HF F1	1.00	0.9626	HF F1	mg/L	69	70 - 130	

**Lab Sample ID: 180-131783-4 MSD**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: GW-RJ-VIIMW01A-122721**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit
Ferrous Iron	0.276	HF F1	1.00	0.9626	HF F1	mg/L	69	70 - 130	0	20

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: SM 3500 FE D - Iron, Ferrous and Ferric

**Lab Sample ID: 180-131783-1 DU**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: EQUIPMENT BLANK**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131783-2 DU**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: GW-RJ-VIIMW03P-122721**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131783-3 DU**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: GW-RJ-VIIMW02P-122721**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	ND	HF	ND		mg/L		NC	20

**Lab Sample ID: 180-131783-4 DU**

**Matrix: Water**

**Analysis Batch: 611030**

**Client Sample ID: GW-RJ-VIIMW01A-122721**

**Prep Type: Dissolved**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ferrous Iron	0.276	HF F1	0.2639		mg/L		4	20

## Method: SM2320 B - Alkalinity, Total

**Lab Sample ID: MB 180-383825/3**

**Matrix: Water**

**Analysis Batch: 383825**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.00	5.00	mg/L			12/29/21 13:26	1

**Lab Sample ID: MB 180-383825/30**

**Matrix: Water**

**Analysis Batch: 383825**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.00	5.00	mg/L			12/29/21 14:59	1

**Lab Sample ID: LCS 180-383825/1**

**Matrix: Water**

**Analysis Batch: 383825**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Alkalinity	251	248.5		mg/L	99	90 - 110	

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: SM2320 B - Alkalinity, Total (Continued)

**Lab Sample ID: LCS 180-383825/28**

**Matrix: Water**

**Analysis Batch: 383825**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits	
Alkalinity	251	246.4		mg/L	98		90 - 110	

**Lab Sample ID: 180-131730-7 DU**

**Matrix: Water**

**Analysis Batch: 383825**

**Client Sample ID: GW-RJ-VIIMW07P-122221**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity	68.7		70.70		mg/L		3	20

**Lab Sample ID: MB 180-384516/30**

**Matrix: Water**

**Analysis Batch: 384516**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.00	5.00	mg/L			01/06/22 15:00	1

**Lab Sample ID: MB 180-384516/54**

**Matrix: Water**

**Analysis Batch: 384516**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		5.00	5.00	mg/L			01/06/22 17:50	1

**Lab Sample ID: LCS 180-384516/29**

**Matrix: Water**

**Analysis Batch: 384516**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits	
Alkalinity	265	254.3		mg/L	96		90 - 110	

**Lab Sample ID: LCS 180-384516/53**

**Matrix: Water**

**Analysis Batch: 384516**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits	
Alkalinity	265	255.5		mg/L	97		90 - 110	

**Lab Sample ID: LLCS 180-384516/28**

**Matrix: Water**

**Analysis Batch: 384516**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec.	Limits	
Alkalinity	15.9	14.05		mg/L	88		75 - 125	

**Lab Sample ID: LLCS 180-384516/52**

**Matrix: Water**

**Analysis Batch: 384516**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec.	Limits	
Alkalinity	15.9	14.96		mg/L	94		75 - 125	

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# QC Sample Results

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Method: SM2320 B - Alkalinity, Total

Lab Sample ID: 180-131783-4 DU

Client Sample ID: GW-RJ-VIIMW01A-122721

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 384516

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity	64.8		63.02		mg/L		3	20

# QC Association Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## GC/MS VOA

### Analysis Batch: 383673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Total/NA	Water	EPA 8260D	
180-131730-5	GW-RJ-VIMW01A-122121	Total/NA	Water	EPA 8260D	
180-131730-6	GW-RJ-VIMW01P-122121	Total/NA	Water	EPA 8260D	
180-131730-7	GW-RJ-VIIMW07P-122221	Total/NA	Water	EPA 8260D	
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	EPA 8260D	
180-131730-10	GW-RJ-DUP1-122321	Total/NA	Water	EPA 8260D	
MB 180-383673/8	Method Blank	Total/NA	Water	EPA 8260D	
LCS 180-383673/3	Lab Control Sample	Total/NA	Water	EPA 8260D	

### Analysis Batch: 383765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Total/NA	Water	EPA 8260D	
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	EPA 8260D	
180-131783-4	GW-RJ-VIIMW01A-122721	Total/NA	Water	EPA 8260D	
MB 180-383765/8	Method Blank	Total/NA	Water	EPA 8260D	
LCS 180-383765/6	Lab Control Sample	Total/NA	Water	EPA 8260D	
180-131783-4 MS	GW-RJ-VIIMW01A-122721	Total/NA	Water	EPA 8260D	
180-131783-4 MSD	GW-RJ-VIIMW01A-122721	Total/NA	Water	EPA 8260D	

### Analysis Batch: 383968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Total/NA	Water	EPA 8260D	
MB 180-383968/9	Method Blank	Total/NA	Water	EPA 8260D	
LCS 180-383968/4	Lab Control Sample	Total/NA	Water	EPA 8260D	

## GC/MS Semi VOA

### Prep Batch: 383702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-2	GW-RJ-VIIMW04P-122221	Total/NA	Water	3510C	
180-131730-3	GW-RJ-VIIMW03A-122221	Total/NA	Water	3510C	
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	3510C	
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	3510C	
180-131730-10	GW-RJ-DUP1-122321	Total/NA	Water	3510C	
MB 180-383702/1-A	Method Blank	Total/NA	Water	3510C	
LCS 180-383702/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 180-383702/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 383841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-2	GW-RJ-VIIMW04P-122221	Total/NA	Water	EPA 8270D	383702
180-131730-3	GW-RJ-VIIMW03A-122221	Total/NA	Water	EPA 8270D	383702
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	EPA 8270D	383702
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	EPA 8270D	383702
180-131730-10	GW-RJ-DUP1-122321	Total/NA	Water	EPA 8270D	383702
MB 180-383702/1-A	Method Blank	Total/NA	Water	EPA 8270D	383702
LCS 180-383702/2-A	Lab Control Sample	Total/NA	Water	EPA 8270D	383702
LCSD 180-383702/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 8270D	383702

# QC Association Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## GC/MS Semi VOA

### Prep Batch: 384027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Total/NA	Water	3510C	
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	3510C	
180-131783-3	GW-RJ-VIIMW02P-122721	Total/NA	Water	3510C	
MB 180-384027/1-A	Method Blank	Total/NA	Water	3510C	
LCS 180-384027/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 180-384027/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 384099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Total/NA	Water	EPA 8270D	384027
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	EPA 8270D	384027
180-131783-3	GW-RJ-VIIMW02P-122721	Total/NA	Water	EPA 8270D	384027
MB 180-384027/1-A	Method Blank	Total/NA	Water	EPA 8270D	384027
LCS 180-384027/2-A	Lab Control Sample	Total/NA	Water	EPA 8270D	384027
LCSD 180-384027/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 8270D	384027

### Prep Batch: 387059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	3510C	
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	3510C	
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	3510C	
180-131783-3	GW-RJ-VIIMW02P-122721	Total/NA	Water	3510C	
MB 180-387059/1-A	Method Blank	Total/NA	Water	3510C	
LCS 180-387059/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 180-387059/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 387126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	EPA 8270E LL	387059
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	EPA 8270E LL	387059
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	EPA 8270E LL	387059
180-131783-3	GW-RJ-VIIMW02P-122721	Total/NA	Water	EPA 8270E LL	387059
MB 180-387059/1-A	Method Blank	Total/NA	Water	EPA 8270E LL	387059
LCS 180-387059/2-A	Lab Control Sample	Total/NA	Water	EPA 8270E LL	387059
LCSD 180-387059/3-A	Lab Control Sample Dup	Total/NA	Water	EPA 8270E LL	387059

## GC VOA

### Analysis Batch: 610258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Total/NA	Water	RSK-175	
180-131730-3	GW-RJ-VIIMW03A-122221	Total/NA	Water	RSK-175	
180-131730-5	GW-RJ-VIMW01A-122121	Total/NA	Water	RSK-175	
180-131730-6	GW-RJ-VIMW01P-122121	Total/NA	Water	RSK-175	
180-131730-7	GW-RJ-VIIMW07P-122221	Total/NA	Water	RSK-175	
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	RSK-175	
180-131730-10	GW-RJ-DUP1-122321	Total/NA	Water	RSK-175	
MB 480-610258/27	Method Blank	Total/NA	Water	RSK-175	
LCS 480-610258/28	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 480-610258/29	Lab Control Sample Dup	Total/NA	Water	RSK-175	

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# QC Association Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## GC VOA

### Analysis Batch: 610374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-2	GW-RJ-VIIMW04P-122221	Total/NA	Water	RSK-175	
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	RSK-175	
MB 480-610374/3	Method Blank	Total/NA	Water	RSK-175	
LCS 480-610374/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 480-610374/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	

### Analysis Batch: 611059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Total/NA	Water	RSK-175	
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	RSK-175	
180-131783-3	GW-RJ-VIIMW02P-122721	Total/NA	Water	RSK-175	
180-131783-4	GW-RJ-VIIMW01A-122721	Total/NA	Water	RSK-175	
MB 480-611059/3	Method Blank	Total/NA	Water	RSK-175	
LCS 480-611059/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 480-611059/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
180-131783-4 MS	GW-RJ-VIIMW01A-122721	Total/NA	Water	RSK-175	
180-131783-4 MSD	GW-RJ-VIIMW01A-122721	Total/NA	Water	RSK-175	

## HPLC/IC

### Analysis Batch: 383425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Total/NA	Water	EPA 300.0 R2.1	
180-131730-1	GW-RJ-VIMW02AR-122121	Total/NA	Water	EPA 300.0 R2.1	
180-131730-2	GW-RJ-VIIMW04P-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-2	GW-RJ-VIIMW04P-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-3	GW-RJ-VIIMW03A-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-3	GW-RJ-VIIMW03A-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-5	GW-RJ-VIMW01A-122121	Total/NA	Water	EPA 300.0 R2.1	
180-131730-5	GW-RJ-VIMW01A-122121	Total/NA	Water	EPA 300.0 R2.1	
180-131730-6	GW-RJ-VIMW01P-122121	Total/NA	Water	EPA 300.0 R2.1	
180-131730-7	GW-RJ-VIIMW07P-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	EPA 300.0 R2.1	
180-131730-10	GW-RJ-DUP1-122321	Total/NA	Water	EPA 300.0 R2.1	
MB 180-383425/7	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-383425/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-131730-1 MS	GW-RJ-VIMW02AR-122121	Total/NA	Water	EPA 300.0 R2.1	
180-131730-1 MSD	GW-RJ-VIMW02AR-122121	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 383829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Total/NA	Water	EPA 300.0 R2.1	
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	EPA 300.0 R2.1	
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	EPA 300.0 R2.1	
180-131783-3	GW-RJ-VIIMW02P-122721	Total/NA	Water	EPA 300.0 R2.1	
MB 180-383829/7	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-383829/6	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

# QC Association Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## HPLC/IC

### Analysis Batch: 383924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-4	GW-RJ-VIIMW01A-122721	Total/NA	Water	EPA 300.0 R2.1	
180-131783-4	GW-RJ-VIIMW01A-122721	Total/NA	Water	EPA 300.0 R2.1	
MB 180-383924/7	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-383924/6	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-131783-4 MS	GW-RJ-VIIMW01A-122721	Total/NA	Water	EPA 300.0 R2.1	
180-131783-4 MSD	GW-RJ-VIIMW01A-122721	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 383653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Dissolved	Water	3005A	
180-131730-3	GW-RJ-VIIMW03A-122221	Dissolved	Water	3005A	
180-131730-4	GW-RJ-VIIMW01P-122221	Dissolved	Water	3005A	
180-131730-5	GW-RJ-VIMW01A-122121	Dissolved	Water	3005A	
180-131730-6	GW-RJ-VIMW01P-122121	Dissolved	Water	3005A	
180-131730-9	GW-RJ-VIIMW02A-122221	Dissolved	Water	3005A	
180-131730-10	GW-RJ-DUP1-122321	Dissolved	Water	3005A	
MB 180-383653/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-383653/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-131730-3 MS	GW-RJ-VIIMW03A-122221	Dissolved	Water	3005A	
180-131730-3 MSD	GW-RJ-VIIMW03A-122221	Dissolved	Water	3005A	

### Prep Batch: 383822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Dissolved	Water	3005A	
180-131783-2	GW-RJ-VIIMW03P-122721	Dissolved	Water	3005A	
180-131783-3	GW-RJ-VIIMW02P-122721	Dissolved	Water	3005A	
180-131783-4	GW-RJ-VIIMW01A-122721	Dissolved	Water	3005A	
MB 180-383822/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-383822/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-131783-4 MS	GW-RJ-VIIMW01A-122721	Dissolved	Water	3005A	
180-131783-4 MSD	GW-RJ-VIIMW01A-122721	Dissolved	Water	3005A	

### Analysis Batch: 384060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Dissolved	Water	EPA 6020A	383653
180-131730-3	GW-RJ-VIIMW03A-122221	Dissolved	Water	EPA 6020A	383653
180-131730-4	GW-RJ-VIIMW01P-122221	Dissolved	Water	EPA 6020A	383653
180-131730-5	GW-RJ-VIMW01A-122121	Dissolved	Water	EPA 6020A	383653
180-131730-6	GW-RJ-VIMW01P-122121	Dissolved	Water	EPA 6020A	383653
180-131730-9	GW-RJ-VIIMW02A-122221	Dissolved	Water	EPA 6020A	383653
180-131730-10	GW-RJ-DUP1-122321	Dissolved	Water	EPA 6020A	383653
MB 180-383653/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	383653
LCS 180-383653/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	383653
180-131730-3 MS	GW-RJ-VIIMW03A-122221	Dissolved	Water	EPA 6020A	383653
180-131730-3 MSD	GW-RJ-VIIMW03A-122221	Dissolved	Water	EPA 6020A	383653

### Prep Batch: 384190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-2	GW-RJ-VIIMW04P-122221	Dissolved	Water	3005A	

Eurofins Pittsburgh

# QC Association Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## Metals (Continued)

### Prep Batch: 384190 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-7	GW-RJ-VIIMW07P-122221	Dissolved	Water	3005A	
MB 180-384190/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-384190/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Analysis Batch: 384204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Dissolved	Water	EPA 6020A	383822
180-131783-2	GW-RJ-VIIMW03P-122721	Dissolved	Water	EPA 6020A	383822
180-131783-3	GW-RJ-VIIMW02P-122721	Dissolved	Water	EPA 6020A	383822
180-131783-4	GW-RJ-VIIMW01A-122721	Dissolved	Water	EPA 6020A	383822
MB 180-383822/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	383822
LCS 180-383822/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	383822
180-131783-4 MS	GW-RJ-VIIMW01A-122721	Dissolved	Water	EPA 6020A	383822
180-131783-4 MSD	GW-RJ-VIIMW01A-122721	Dissolved	Water	EPA 6020A	383822

### Analysis Batch: 384445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-2	GW-RJ-VIIMW04P-122221	Dissolved	Water	EPA 6020A	384190
180-131730-7	GW-RJ-VIIMW07P-122221	Dissolved	Water	EPA 6020A	384190
MB 180-384190/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	384190
LCS 180-384190/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	384190

## General Chemistry

### Analysis Batch: 383825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Total/NA	Water	SM2320 B	
180-131730-2	GW-RJ-VIIMW04P-122221	Total/NA	Water	SM2320 B	
180-131730-3	GW-RJ-VIIMW03A-122221	Total/NA	Water	SM2320 B	
180-131730-4	GW-RJ-VIIMW01P-122221	Total/NA	Water	SM2320 B	
180-131730-5	GW-RJ-VIMW01A-122121	Total/NA	Water	SM2320 B	
180-131730-6	GW-RJ-VIMW01P-122121	Total/NA	Water	SM2320 B	
180-131730-7	GW-RJ-VIIMW07P-122221	Total/NA	Water	SM2320 B	
180-131730-9	GW-RJ-VIIMW02A-122221	Total/NA	Water	SM2320 B	
180-131730-10	GW-RJ-DUP1-122321	Total/NA	Water	SM2320 B	
MB 180-383825/3	Method Blank	Total/NA	Water	SM2320 B	
MB 180-383825/30	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-383825/1	Lab Control Sample	Total/NA	Water	SM2320 B	
LCS 180-383825/28	Lab Control Sample	Total/NA	Water	SM2320 B	
180-131730-7 DU	GW-RJ-VIIMW07P-122221	Total/NA	Water	SM2320 B	

### Analysis Batch: 384516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Total/NA	Water	SM2320 B	
180-131783-2	GW-RJ-VIIMW03P-122721	Total/NA	Water	SM2320 B	
180-131783-3	GW-RJ-VIIMW02P-122721	Total/NA	Water	SM2320 B	
180-131783-4	GW-RJ-VIIMW01A-122721	Total/NA	Water	SM2320 B	
MB 180-384516/30	Method Blank	Total/NA	Water	SM2320 B	
MB 180-384516/54	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-384516/29	Lab Control Sample	Total/NA	Water	SM2320 B	
LCS 180-384516/53	Lab Control Sample	Total/NA	Water	SM2320 B	

# QC Association Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## General Chemistry (Continued)

### Analysis Batch: 384516 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LLCS 180-384516/28	Lab Control Sample	Total/NA	Water	SM2320 B	
LLCS 180-384516/52	Lab Control Sample	Total/NA	Water	SM2320 B	
180-131783-4 DU	GW-RJ-VIIMW01A-122721	Total/NA	Water	SM2320 B	

### Analysis Batch: 610910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Dissolved	Water	SM 3500 FE D	
180-131730-2	GW-RJ-VIIMW04P-122221	Dissolved	Water	SM 3500 FE D	
180-131730-3	GW-RJ-VIIMW03A-122221	Dissolved	Water	SM 3500 FE D	
180-131730-4	GW-RJ-VIIMW01P-122221	Dissolved	Water	SM 3500 FE D	
180-131730-5	GW-RJ-VIMW01A-122121	Dissolved	Water	SM 3500 FE D	
180-131730-6	GW-RJ-VIMW01P-122121	Dissolved	Water	SM 3500 FE D	
180-131730-7	GW-RJ-VIIMW07P-122221	Dissolved	Water	SM 3500 FE D	
180-131730-9	GW-RJ-VIIMW02A-122221	Dissolved	Water	SM 3500 FE D	
180-131730-10	GW-RJ-DUP1-122321	Dissolved	Water	SM 3500 FE D	
MB 480-610910/29	Method Blank	Total/NA	Water	SM 3500 FE D	
MB 480-610910/3	Method Blank	Total/NA	Water	SM 3500 FE D	
LCS 480-610910/30	Lab Control Sample	Total/NA	Water	SM 3500 FE D	
LCS 480-610910/4	Lab Control Sample	Total/NA	Water	SM 3500 FE D	
180-131730-1 MS	GW-RJ-VIMW02AR-122121	Dissolved	Water	SM 3500 FE D	
180-131730-6 MS	GW-RJ-VIMW01P-122121	Dissolved	Water	SM 3500 FE D	
180-131730-1 DU	GW-RJ-VIMW02AR-122121	Dissolved	Water	SM 3500 FE D	
180-131730-2 DU	GW-RJ-VIIMW04P-122221	Dissolved	Water	SM 3500 FE D	
180-131730-3 DU	GW-RJ-VIIMW03A-122221	Dissolved	Water	SM 3500 FE D	
180-131730-4 DU	GW-RJ-VIIMW01P-122221	Dissolved	Water	SM 3500 FE D	
180-131730-5 DU	GW-RJ-VIMW01A-122121	Dissolved	Water	SM 3500 FE D	
180-131730-6 DU	GW-RJ-VIMW01P-122121	Dissolved	Water	SM 3500 FE D	
180-131730-7 DU	GW-RJ-VIIMW07P-122221	Dissolved	Water	SM 3500 FE D	
180-131730-9 DU	GW-RJ-VIIMW02A-122221	Dissolved	Water	SM 3500 FE D	
180-131730-10 DU	GW-RJ-DUP1-122321	Dissolved	Water	SM 3500 FE D	

### Analysis Batch: 611030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Dissolved	Water	SM 3500 FE D	
180-131783-2	GW-RJ-VIIMW03P-122721	Dissolved	Water	SM 3500 FE D	
180-131783-3	GW-RJ-VIIMW02P-122721	Dissolved	Water	SM 3500 FE D	
180-131783-4	GW-RJ-VIIMW01A-122721	Dissolved	Water	SM 3500 FE D	
MB 480-611030/3	Method Blank	Total/NA	Water	SM 3500 FE D	
LCS 480-611030/4	Lab Control Sample	Total/NA	Water	SM 3500 FE D	
180-131783-4 MS	GW-RJ-VIIMW01A-122721	Dissolved	Water	SM 3500 FE D	
180-131783-4 MSD	GW-RJ-VIIMW01A-122721	Dissolved	Water	SM 3500 FE D	
180-131783-1 DU	EQUIPMENT BLANK	Dissolved	Water	SM 3500 FE D	
180-131783-2 DU	GW-RJ-VIIMW03P-122721	Dissolved	Water	SM 3500 FE D	
180-131783-3 DU	GW-RJ-VIIMW02P-122721	Dissolved	Water	SM 3500 FE D	
180-131783-4 DU	GW-RJ-VIIMW01A-122721	Dissolved	Water	SM 3500 FE D	

### Analysis Batch: 611082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-2	GW-RJ-VIIMW04P-122221	Dissolved	Water	SM 3500	

Eurofins Pittsburgh

# QC Association Summary

Client: Frontier Industrial Corp  
Project/Site: Weirton VRP

Job ID: 180-131730-1

## General Chemistry

### Analysis Batch: 611083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131730-1	GW-RJ-VIMW02AR-122121	Dissolved	Water	SM 3500	
180-131730-3	GW-RJ-VIIMW03A-122221	Dissolved	Water	SM 3500	
180-131730-4	GW-RJ-VIIMW01P-122221	Dissolved	Water	SM 3500	
180-131730-5	GW-RJ-VIMW01A-122121	Dissolved	Water	SM 3500	
180-131730-6	GW-RJ-VIMW01P-122121	Dissolved	Water	SM 3500	
180-131730-7	GW-RJ-VIIMW07P-122221	Dissolved	Water	SM 3500	
180-131730-9	GW-RJ-VIIMW02A-122221	Dissolved	Water	SM 3500	
180-131730-10	GW-RJ-DUP1-122321	Dissolved	Water	SM 3500	

### Analysis Batch: 611103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131783-1	EQUIPMENT BLANK	Dissolved	Water	SM 3500	
180-131783-2	GW-RJ-VIIMW03P-122721	Dissolved	Water	SM 3500	
180-131783-3	GW-RJ-VIIMW02P-122721	Dissolved	Water	SM 3500	
180-131783-4	GW-RJ-VIIMW01A-122721	Dissolved	Water	SM 3500	

## **Chain of Custody Record**

Client Information		Sampler: <b>RJ</b>		Lab PM: Cisneros, Roxanne		Carrier Tracking No(s):		COC No: 180-76867-14764.2									
Client Contact: Ryan Jacobs		Phone: <b>716 387 0638</b>		E-Mail: roxanne.cisneros@Eurofinset.com		State of Origin:		Page: Page 2 of 4									
Company: Frontier Industrial Corp		PWSID:		Analysis Requested													
Address: 500 Seneca St Suite 504		Due Date Requested: <b>STANDARD</b>															
City: Buffalo		TAT Requested (days): <b>STANDARD</b>															
State, Zip: NY, 14204		Compliance Project: <b>Y</b> Yes <b>N</b> No															
Phone:		PO #:															
Email: rjacobs@fic-services.com		Purchase Order Requested															
Project Name: MJSW-Spent Plant		WO #: Permit# WV0001058															
Project #: 18023439		SSOW#:															
Site:																	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=oil/water/oil, T=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - TCL 4.2 GC/MS Volatiles	2320B, 300_ORGFM_28D, 300_ORGFM	3600_F+3_B_Calc - Local Method	RSK_175 - Methane, Ethane, Ethene	8270D - TCL 4.2 GC/MS SemiVolatiles 8270D	3600_F+3_B_Calc 6020A (FF)	0012_B - CHANIDE DISS TIN METALS	Total Number of containers	I - Ice J - DI Water K - EDTA L - EDA Other:	
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A	N	D	A	N	D		Special Instructions/Note:		
<i>Gw-RJ-V1mwo2AR-122121</i>		<i>12/21/21</i>	<i>1530</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>X</i>				<i>8</i>	<i>C8</i>		
<i>Gw-RJ-V1mwo4D-122221</i>		<i>12/22/21</i>	<i>1535</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>X</i>				<i>5</i>	<i>G, 9</i>		
<i>Gw-RJ-V1mwo3A-122221</i>		<i>12/22/21</i>	<i>1720</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>XX</i>				<i>7</i>	<i>C8</i>		
<i>Gw-RJ-V1mwo1P-122221</i>		<i>12/22/21</i>	<i>1420</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>XX</i>				<i>10</i>	<i>G, 9</i>		
<i>Gw-RJ-V1mwo1A-122121</i>		<i>12/21/21</i>	<i>1135</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>X</i>				<i>3</i>	<i>C8</i>		
<i>Gw-RJ-V1mwo1P-122121</i>		<i>12/21/21</i>	<i>1245</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>X</i>				<i>9</i>	<i>G, 9</i>		
<i>Gw-RJ-V1mwo7P-122221</i>		<i>12/22/21</i>	<i>1255</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>XX</i>	<i>XX</i>				<i>10</i>	<i>C8</i>		
<i>Gw-RJ-CAMV04AP-122321</i>		<i>12/22/21</i>	<i>1140</i>	<i>G</i>	<i>Water</i>	<i>N</i>	<i>N</i>	<i>X</i>						<i>5</i>	<i>Roxanne, SEE EMAIL</i>		
<i>Gw-RJ-V1mwo2A-122321</i>		<i>12/23/21</i>	<i>1845</i>	<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>X</i>				<i>10</i>	<i>WEIRD AN</i>		
<i>Gw-RJ-DUPL-122321</i>		<i>12/23/21</i>		<i>G</i>	<i>Water</i>	<i>Y</i>	<i>N</i>	<i>X</i>	<i>X</i>	<i>X</i>				<i>10</i>			
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months											
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:											
Empty Kit Relinquished by:			Date:			Time:			Method of Shipment:								
Relinquished by:			Date/Time:			Company			Received by:			<i>D Watson</i>			Date/Time:	<i>12-23-21</i>	Company <i>BASF</i>
Relinquished by:			Date/Time:			Company			Received by:						Date/Time:	<i>16:20</i>	Company
Relinquished by:			Date/Time:			Company			Received by:						Date/Time:		Company
Custody Seals Intact:		Custody Seal No.: <b>                  </b>													Cooler Temperature(s) °C and Other Remarks:		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																	

&gt;&gt; Select a Laboratory or Service Center &lt;&lt;

#N/A  
#N/A  
#N/A  
##

## Chain of Custody Record

Environment Testng  
AmericaRegulatory Program:  DW  NPDES  RCRA  Other

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact		Project Manager: Roxanne Cisneros		Site Contact: Ryan Jacobs		Date:	COC No: _____ of _____ COCs
Frontier Industrial Corp 500 Seneca St. Suite 504 Buffalo, NY. 14204 (716) 387-0638 Phone (xxx) xxx-xxxx FAX Project Name: Weirton VRP MJSW - Weirton P O #		Email: rjacobs@fic-services.com Tel/Fax: (716) 387-0638		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below STANDARD _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Lab Contact: _____	TALS Project #: _____
						Carrier: _____	Sampler: _____
							For Lab Use Only: _____
							Walk-in Client: _____
							Lab Sampling: _____
							Job / SDG No.: _____
							Sample Specific Notes: _____
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N) 8/26/03-C-1C 4.7 G/MS 8/26/03-B10 (fm.2B) 300 1500-F13 calc - local ESK 175. MFTANE, SUMAUR, 8/27/03 B100-F13 B.Calc, b100 (ft)
Equipment BLANK 1		12/27/03	7000	G	W	10	Y N X X X X X X X X
Gw-RJ-VII mw03P-122721		12/27/03	1800	G	W	10	Y N X X X X X X X X
Gw-RJ-VII mw02P-122721		12/27/03	1400	G	W	10	Y N X X X X X X X X
Gw-RJ-VII mw01A-122121		12/21/03	1230	G	W	8	Y N X X X X X X
Gw-RJ-VII mw01AMS/MSD-122721		12/27/03		G	W	8	Y N X X X X X X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____							
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.				Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
Special Instructions/QC Requirements & Comments:							
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temp. (°C): Obs'd: _____ Corr'd: _____		Therm ID No.: _____
Relinquished by: _____		Company: _____		Date/Time: _____	Received by: <i>JR</i>	Company: <i>ETTA PIA</i>	Date/Time: <i>Picahy 900</i>
Relinquished by: _____		Company: _____		Date/Time: _____	Received by: <i>X</i>	Company: _____	Date/Time: _____
Relinquished by: _____		Company: _____		Date/Time: _____	Received in Laboratory by: _____	Company: _____	Date/Time: _____

FedEx  
Express



**FedEx.** Express Package US Airbill

FedEx  
Tracking  
Number

8147 5118 2457

0200

1 From Date 12/29/21

Sender's Name RYAN JACOBS Phone 716 337 030

Company CONESVILLE INDUSTRIAL PARK

Address 47201 C-273

City CONESVILLE

State 011 ZIP 43811

Dept/Room/Suite/Room

2 Your Internal Billing Reference 2416 3092 7

3 To Recipient's Name SHIPPING MCN

Phone

Company UPSINS TEST AMERICA PIT

Address 301 ALPHA DR.

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept/Room/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City PITTSBURGH

State PA ZIP 15238

Dept/Room/Suite/Room

Hold Wednesday  
FedEx location address  
REQUIRED. NOT available for  
FedEx First Overnight.

Hold Saturday  
FedEx location address  
REQUIRED. Available DAILY for  
FedEx Priority Overnight and  
FedEx 2Day in select locations.

5 Packaging

Declared value line page

FedEx Envelope

FedEx Flat

Special Handling and Delivery Options

Saturday Delivery

NOT available for FedEx Standard Overnight or FedEx 2Day in selected locations.

No Signature Required

Signature not required for delivery to business accounts.

This shipment contains dangerous goods.

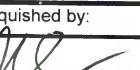
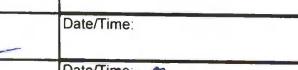
Does not apply to dangerous goods.

Yes As per packed

As per classification

## Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:			Lab PM: Cisneros, Roxanne			Carrier Tracking No(s):		COC No: 180-451823.1	
Client Contact: Shipping/Receiving		Phone:			E-Mail: roxanne.cisneros@Eurofinset.com			State of Origin: West Virginia		Page: Page 1 of 1	
Company: TestAmerica Laboratories, Inc.					Accreditations Required (See note): State - West Virginia DEP					Job #: 180-131730-1	
Address: 10 Hazelwood Drive,		Due Date Requested: 1/9/2022						Analysis Requested		Preservation Codes:	
City: Amherst		TAT Requested (days):								A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA	
State, Zip: NY, 14228-2298										M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Phone: 716-691-2600(Tel) 716-691-7991(Fax)		PO #:								Other:	
Email:		WO #:									
Project Name: Weirton VRP		Project #: 18023439									
Site:		SSOW#:									
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)			Total Number of containers	Special Instructions/Note:
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RSK_175/(MOD) Methane			
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3500_Fe+3_D_Cal/FIELD_FLTRD_Ferric Iron			
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3500_FE_DFIELD_FLTRD_Ferrous Iron			
GW-RJ-VIMW02AR-122121 (180-131730-1)		12/21/21	15:30 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
GW-RJ-VIMW04D-122221 (180-131730-2)		12/22/21	15:35 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X		3	
GW-RJ-VIMW03A-122221 (180-131730-3)		12/22/21	17:20 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
GW-RJ-VIMW01P-122221 (180-131730-4)		12/22/21	14:20 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
GW-RJ-VIMW01A-122121 (180-131730-5)		12/21/21	11:35 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
GW-RJ-VIMW01P-122121 (180-131730-6)		12/21/21	12:45 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
GW-RJ-VIMW07P-122221 (180-131730-7)		12/22/21	12:55 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
GW-RJ-VIMW02A-122221 (180-131730-9)		12/22/21	18:45 Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
GW-RJ-DUP1-122321 (180-131730-10)		12/23/21	Eastern		Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X X		3	
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.											
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Unconfirmed						<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For	Months		
Deliverable Requested: I, II, III, IV, Other (specify)						Primary Deliverable Rank: 2					
						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: 		Date/Time: 12/27/21 1700		Company: EX-ACT		Received by: 				Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:				Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by: 				Date/Time:	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 						Cooler Temperature(s) °C and Other Remarks: 2.8 #1			

## Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 180-451917.1
Client Contact: Shipping/Receiving		Phone:	E-Mail: roxanne.cisneros@Eurofinset.com	State of Origin: West Virginia	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - West Virginia DEP			Job #: 180-131730-1
Address: 10 Hazelwood Drive,	Due Date Requested: 1/9/2022	<b>Analysis Requested</b>			Preservation Codes:
City: Amherst	TAT Requested (days):				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:
State, Zip: NY, 14228-2298	PO #:				M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	WO #:				
Email:					
Project Name: Weirton VRP	Project #: 18023439				
Site:	SSOW#:				
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=Comp, G=Grab)</b>	<b>Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=Air)</b>
				Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)
				<input checked="" type="checkbox"/> RSK_175f(MOD) Methane	<input checked="" type="checkbox"/> 3500_Fe+3_D_Cal/FIELD_FLTRD Ferric Iron
				<input checked="" type="checkbox"/> 3500_FE_DFIELD_FLTRD Ferrous Iron	
					Total Number of containers
<b>Special Instructions/Note:</b>					
GW-RJ-VIMW02AR-122121 (180-131730-1)      12/21/21      15:30 Eastern      Water      X      X      X      1 GW-RJ-VIIMW04D-122221 (180-131730-2)      12/22/21      15:35 Eastern      Water      X      X      X      1 GW-RJ-VIIMW03A-122221 (180-131730-3)      12/22/21      17:20 Eastern      Water      X      X      X      1 GW-RJ-VIIMW01P-122221 (180-131730-4)      12/22/21      14:20 Eastern      Water      X      X      X      1 GW-RJ-VIMW01A-122121 (180-131730-5)      12/21/21      11:35 Eastern      Water      X      X      X      1 GW-RJ-VIMW01P-122121 (180-131730-6)      12/21/21      12:45 Eastern      Water      X      X      X      1 GW-RJ-VIIMW07P-122221 (180-131730-7)      12/22/21      12:55 Eastern      Water      X      X      X      1 GW-RJ-VIIMW02A-122221 (180-131730-9)      12/22/21      18:45 Eastern      Water      X      X      X      1 GW-RJ-DUP1-122321 (180-131730-10)      12/23/21      Eastern      Water      X      X      X      1					
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.					
<b>Possible Hazard Identification</b>			<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>		
Unconfirmed			<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		
Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: <i>Mo</i>		Date/Time: <i>12-29-21 1700</i>	Company: <i>Earth</i>	Received by: <i>MMW</i>	Date/Time: <i>12/30/21 1000</i>
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Custody Seals Intact: △ Yes △ No	Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: <i>2,2 # CCF</i>	

## Chain of Custody Record





## Login Sample Receipt Checklist

Client: Frontier Industrial Corp

Job Number: 180-131730-1

**Login Number:** 131730

**List Source:** Eurofins Pittsburgh

**List Number:** 1

**Creator:** Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: Frontier Industrial Corp

Job Number: 180-131730-1

**Login Number:** 131730

**List Source:** Eurofins Buffalo

**List Number:** 2

**List Creation:** 12/28/21 10:56 AM

**Creator:** Sabuda, Brendan D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9 #1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

## Login Sample Receipt Checklist

Client: Frontier Industrial Corp

Job Number: 180-131730-1

**Login Number:** 131783

**List Source:** Eurofins Pittsburgh

**List Number:** 1

**Creator:** Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: Frontier Industrial Corp

Job Number: 180-131730-1

**Login Number:** 131783

**List Source:** Eurofins Buffalo

**List Number:** 2

**List Creation:** 01/07/22 09:49 AM

**Creator:** Schick, Robert J

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0 ir gun #1 ice
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

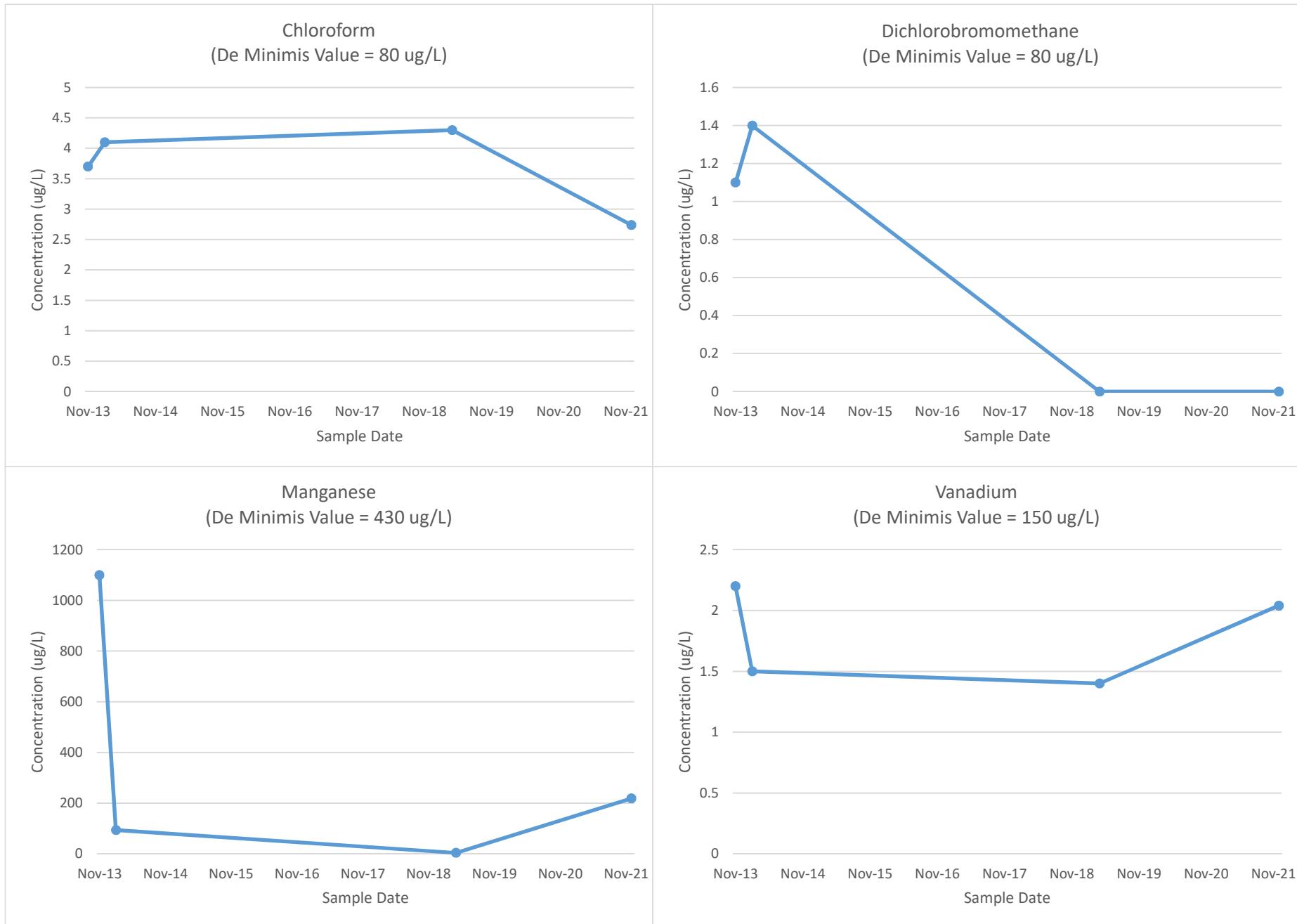
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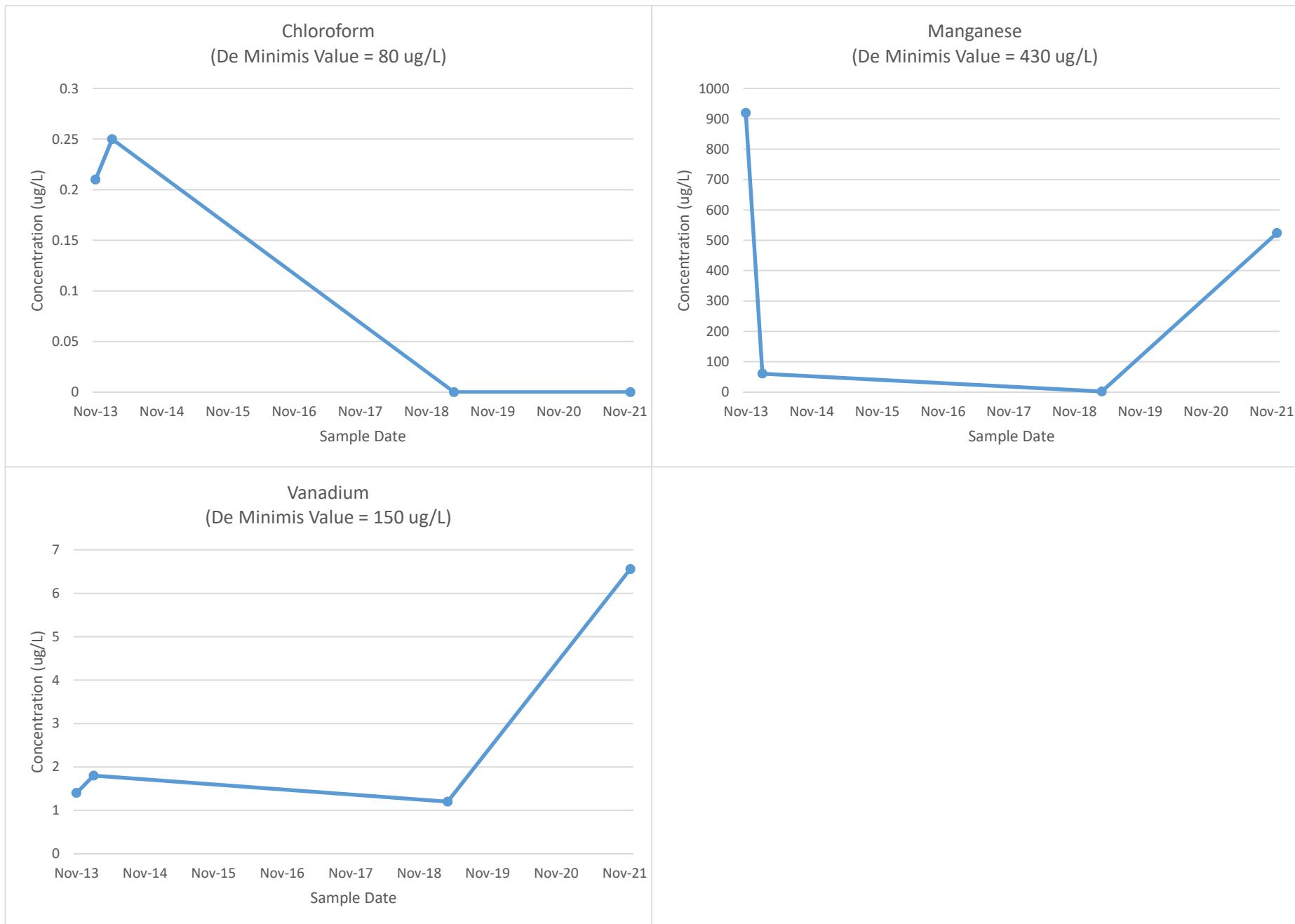
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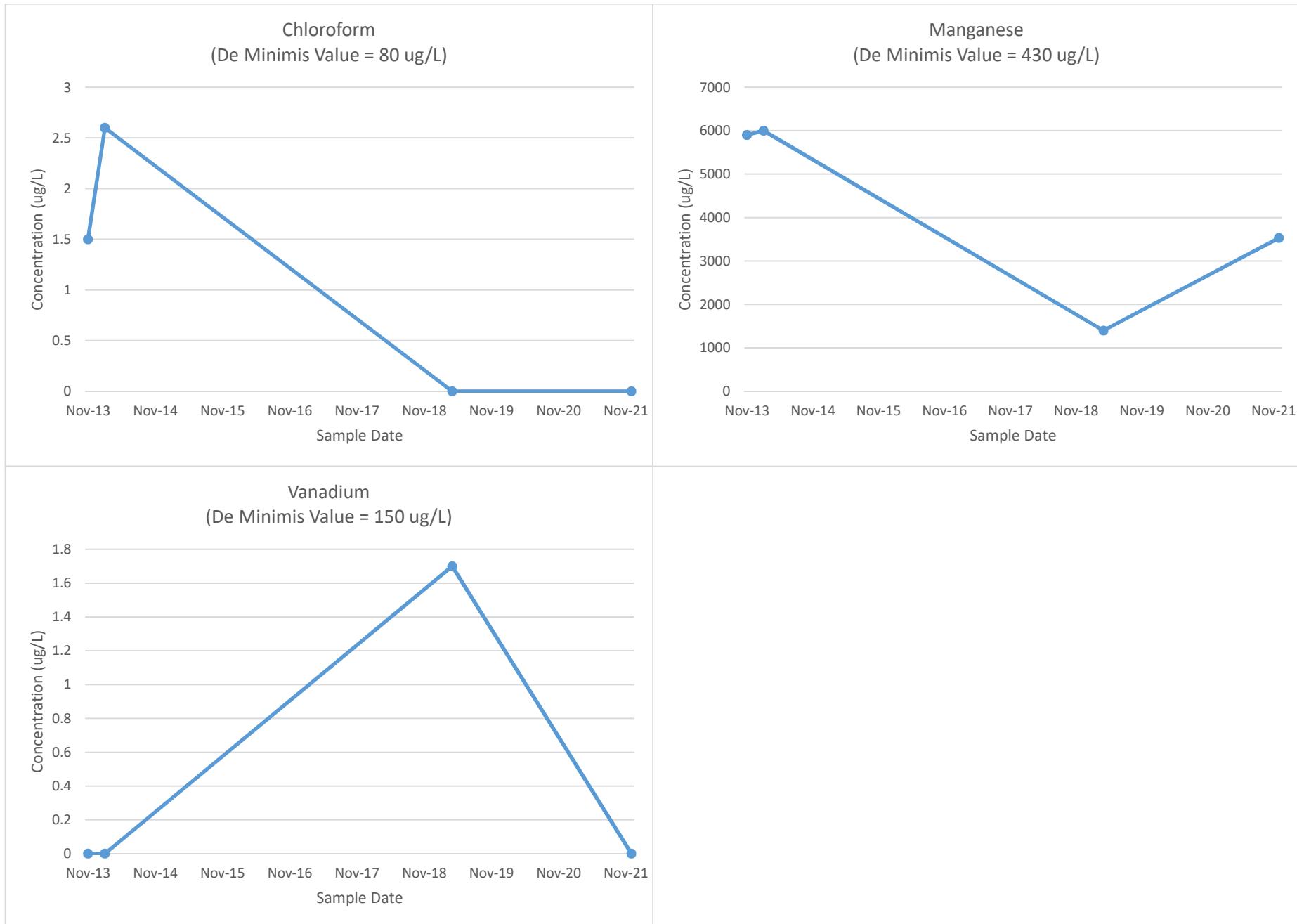
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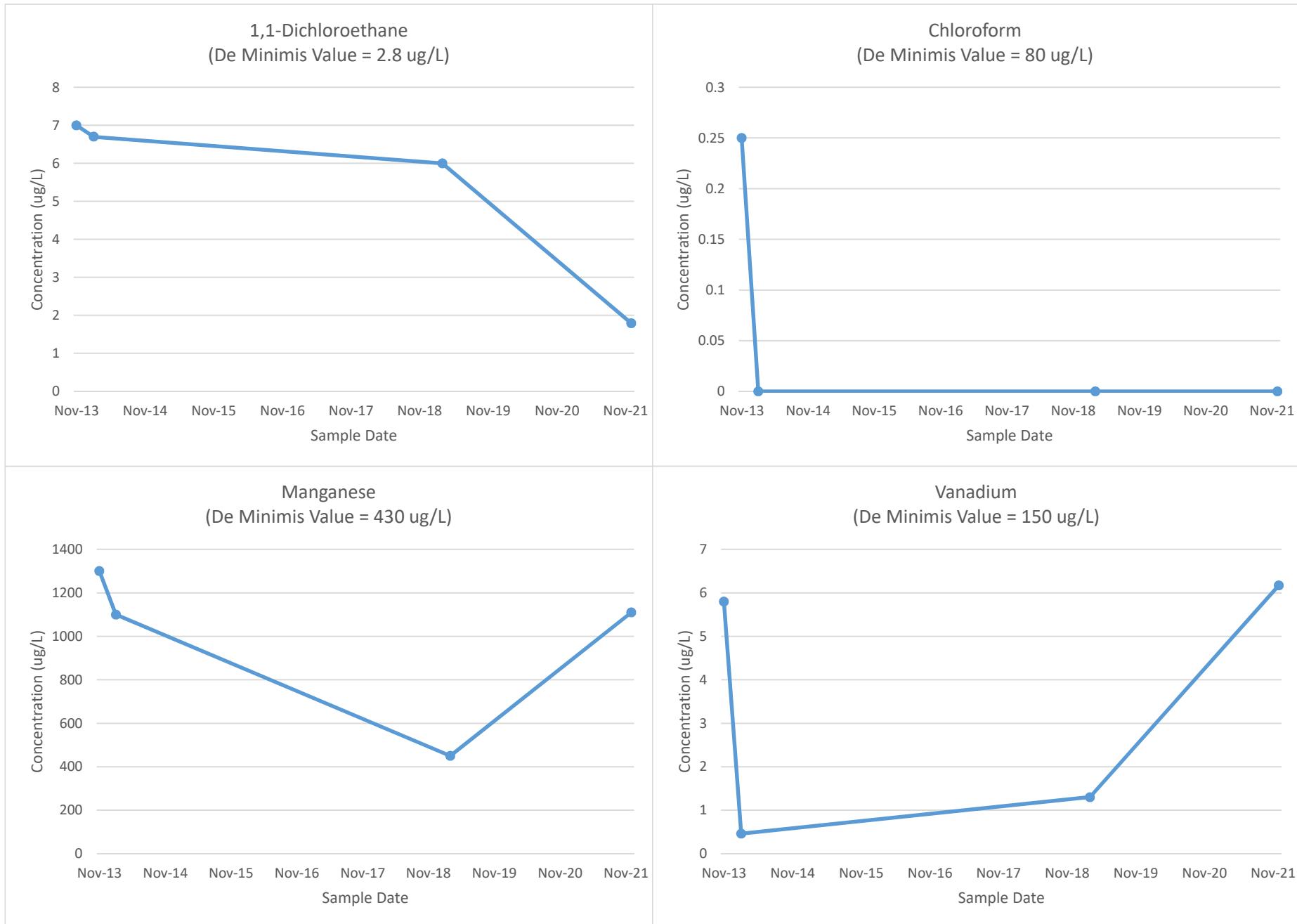
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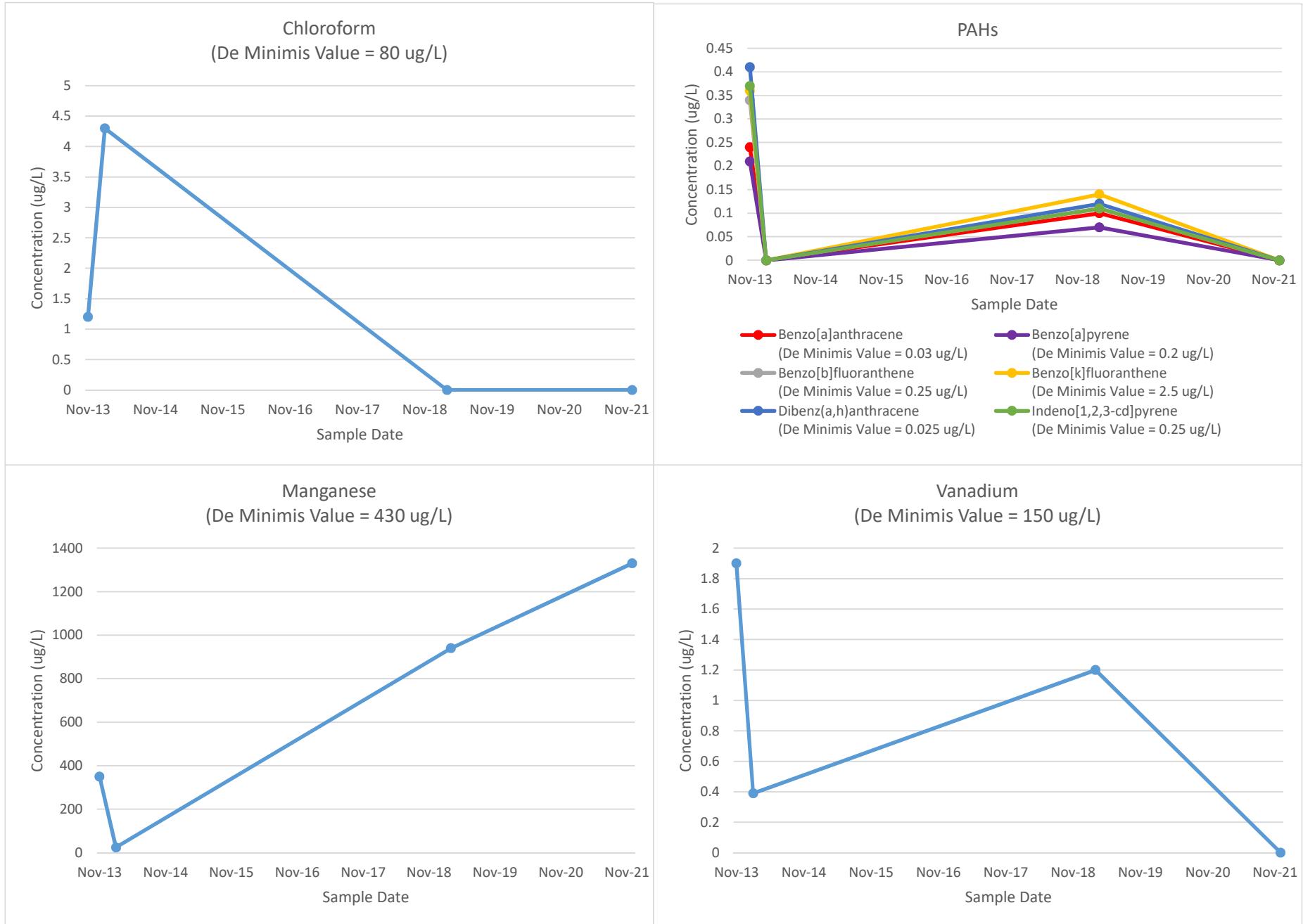
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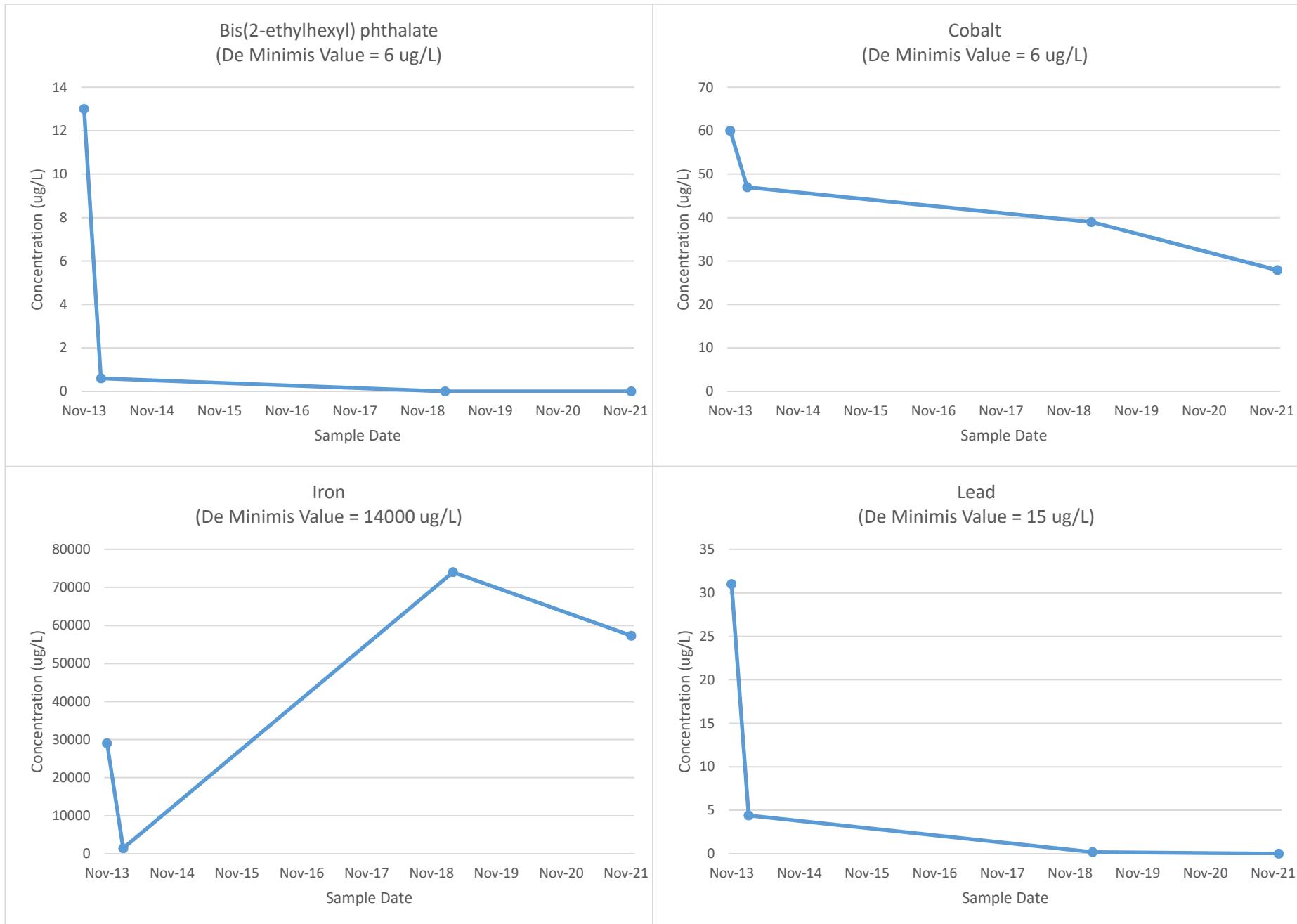
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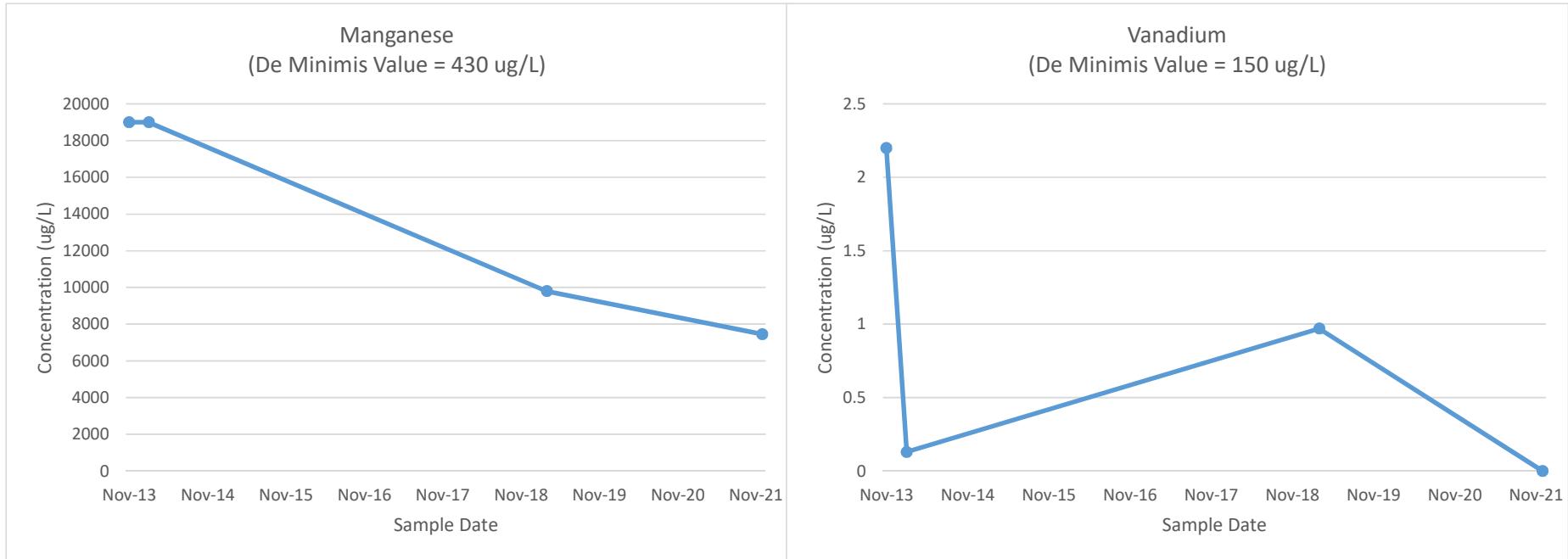
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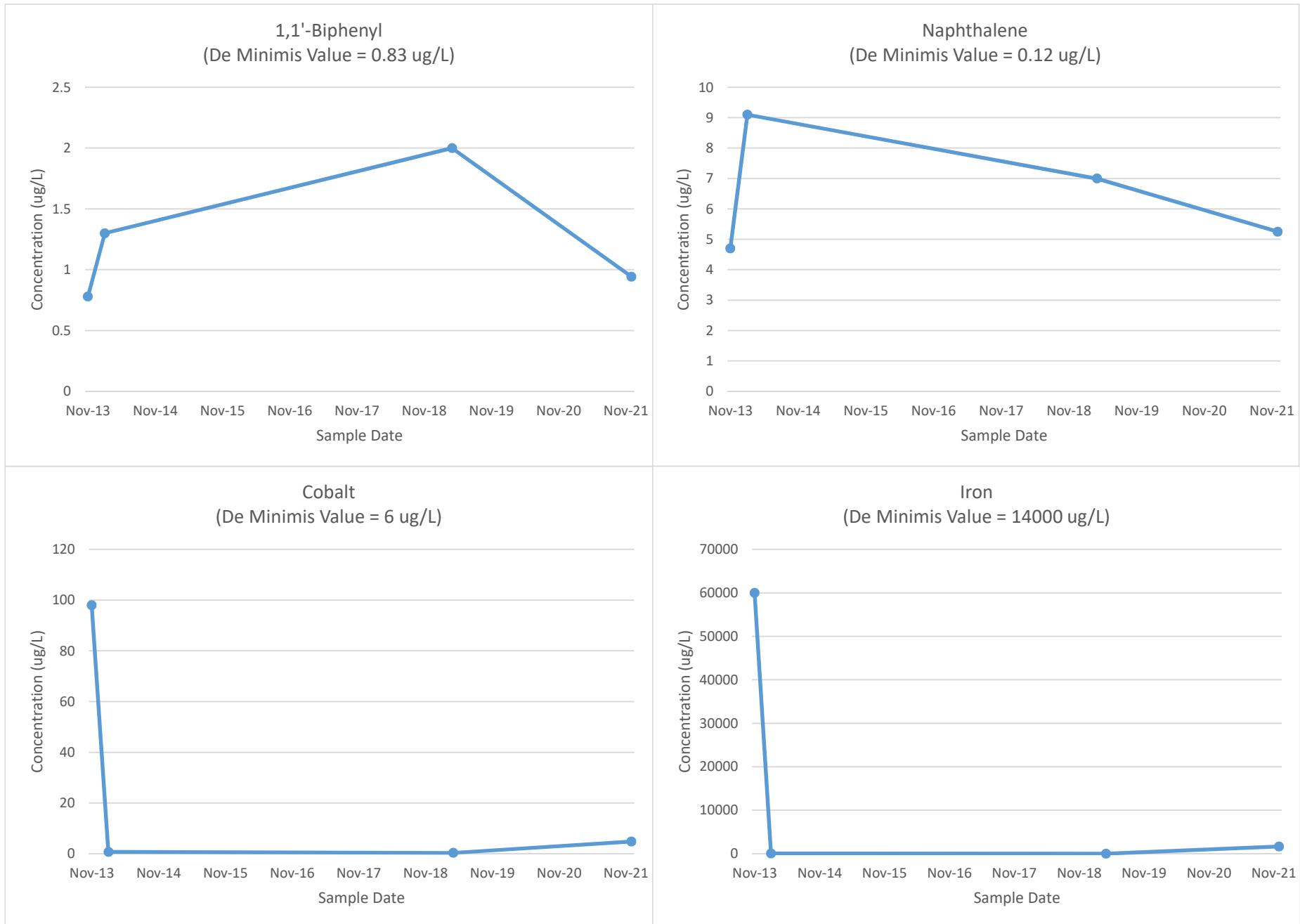
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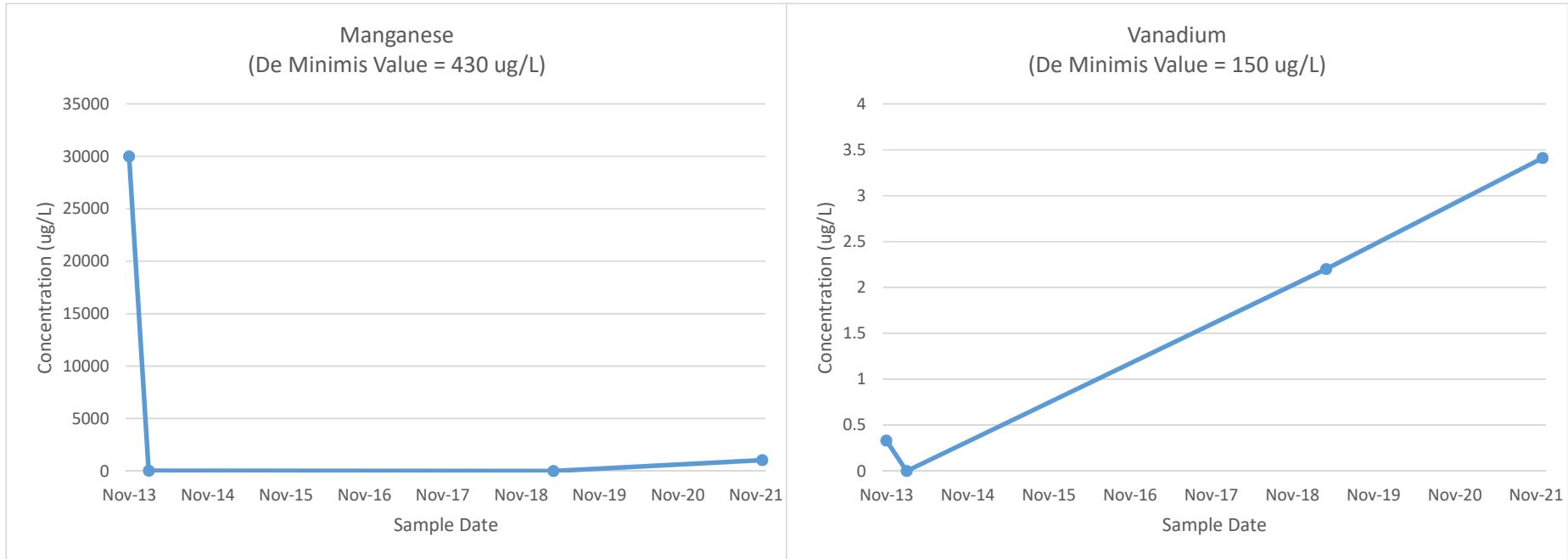
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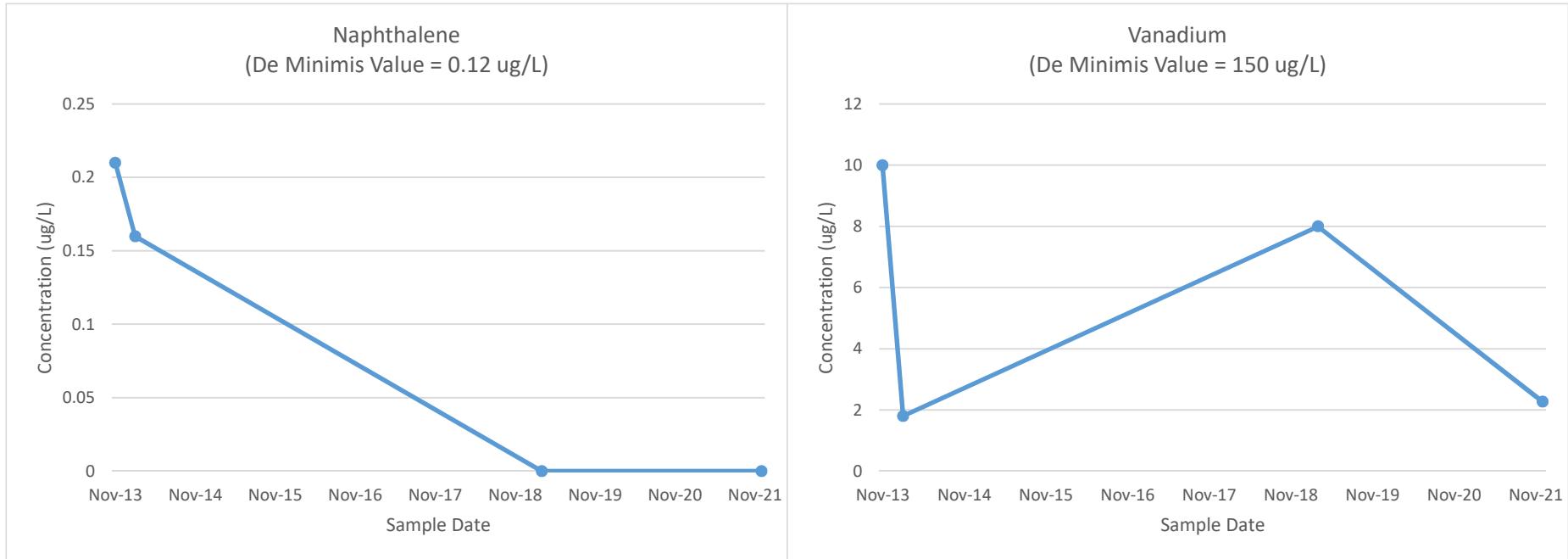
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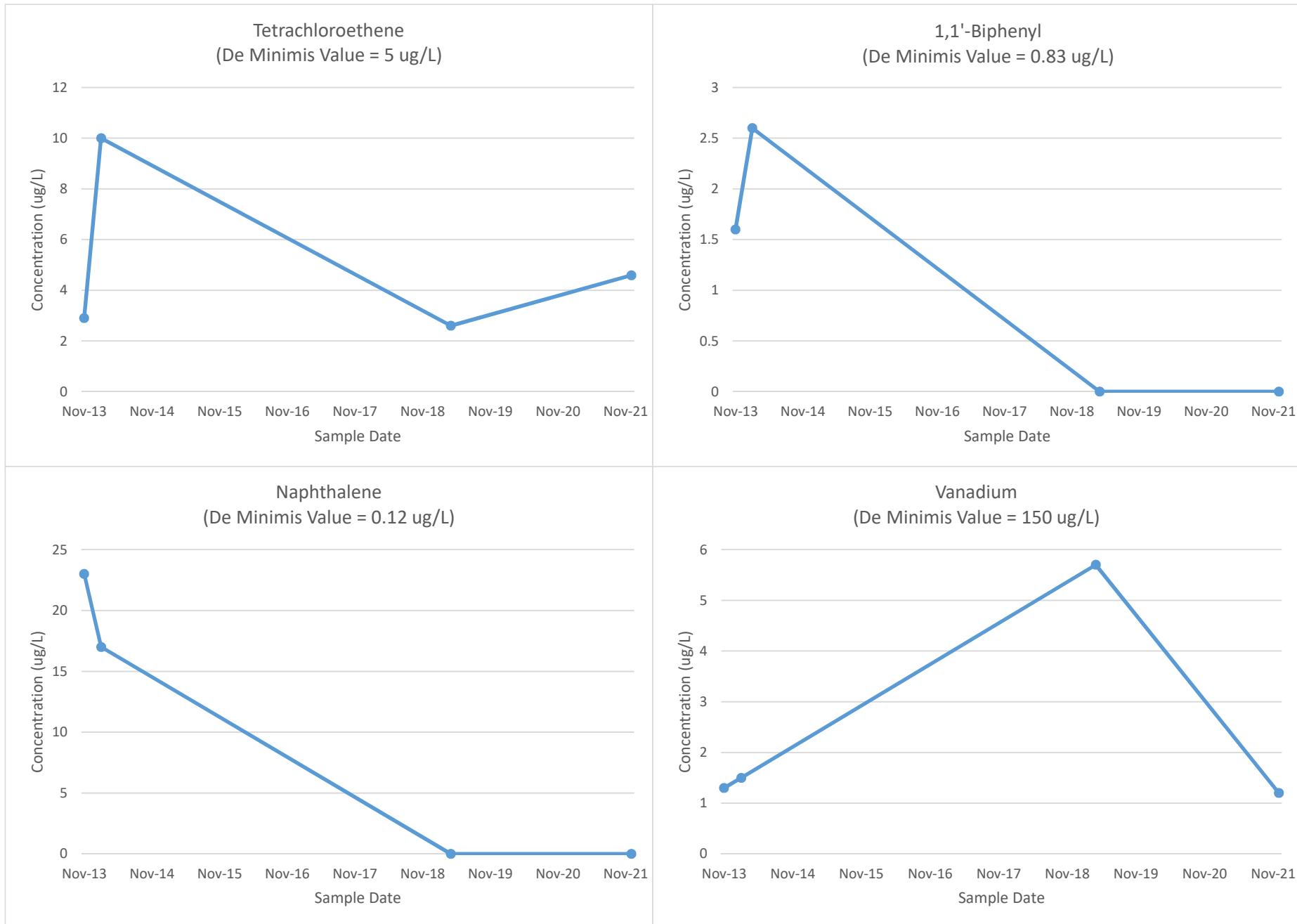
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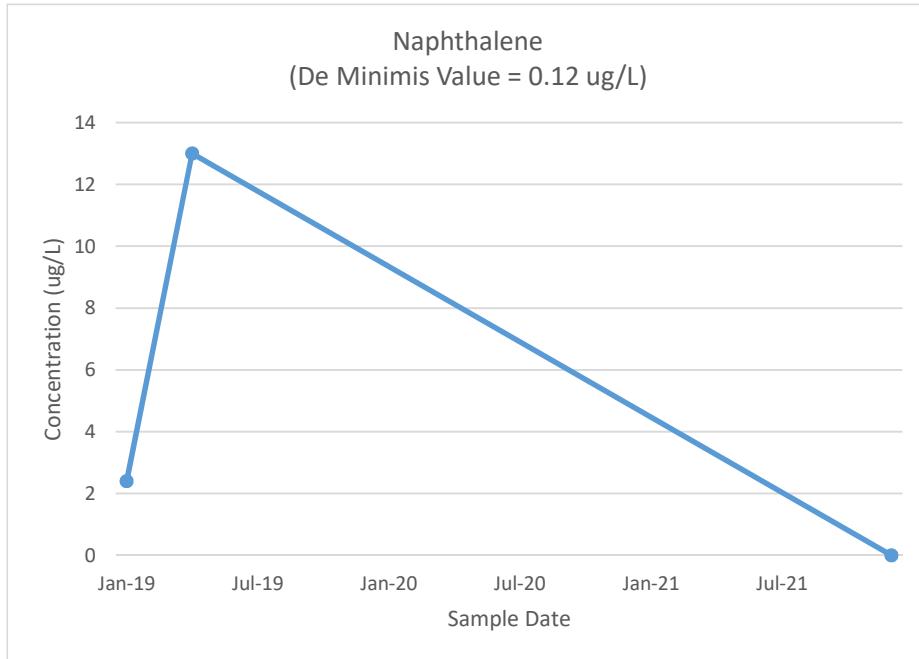
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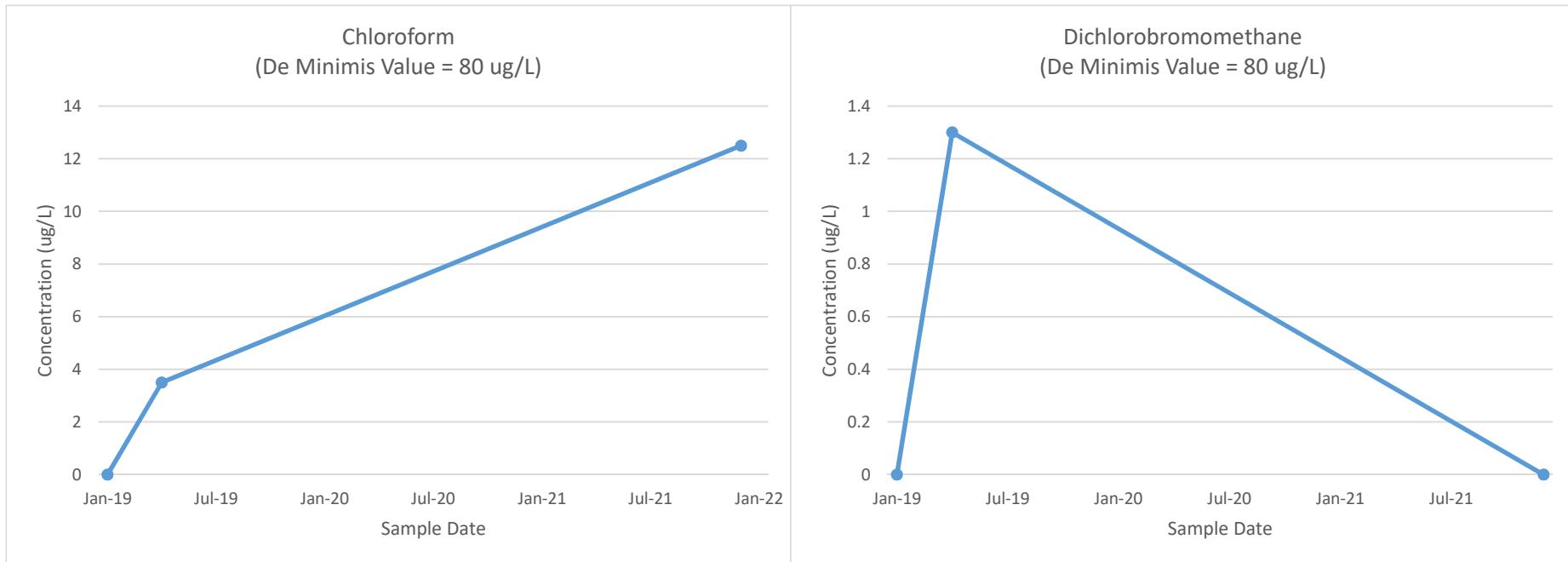
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**ATTACHMENT 2 - TIME SERIES**  
**VII-MW-04P**



**ATTACHMENT 2 - TIME SERIES**  
**VII-MW-07P**



## **ATTACHMENT 2 - TIME SERIES**

## Combined

